

# ALL HANDS



in this issue:

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THE NEW UNIFORM

JULY 1975



# TAFFRAIL TALK

This year marks the 75th anniversary of the Navy's formal acceptance of its first submarine and the 20th anniversary of the nuclear-powered submarine. June 27, however, marked yet another important Navy submarine milestone. On that date, USS *Tigrone* (AGSS-419), the last World War II combat submarine on active duty, was decommissioned at Groton, Conn.

As *Trident*, the most sophisticated submarine in the world, prepares to join the fleet, *Tigrone* leaves the fleet with a distinguished World War II combat record. She represents accomplishments of the "silent service" during that period. Launched and commissioned in 1944, *Tigrone* conducted three World War II combat patrols and was among the ships present at Tokyo Bay on V-J Day 1945.

Since then, *Tigrone* has been a radar picket submarine and an auxiliary, providing services for other submarines, training submarine personnel and testing new acoustic systems.

\* \* \*

Many of the Navy's most practical and ingenious devices and equipment are conceived by sailors trying to do a better job—or sometimes trying to get out of a job. A while back, Machinist's Mate 1st Class Thomas P. Failla did a better job and saved the Navy about \$3000 when a running track for USS *America*'s number three aircraft elevator door broke. Normally, a shipyard job requiring at least 30 man-days to complete, Failla accomplished the repair job with a \$2.19 toy race car.

The section of broken track lay inaccessibly inside the huge steel door. Usually, a section of the door must be cut away and, in a complex operation with cables and pipes, the broken track is retrieved and replaced.

Failla, who was LPO of the ship's A Division hydraulics shop at the time, said, "I put my Yankee ingenuity to work and decided to run a toy car down the track inside the door." He said he figured such a small, wheeled-vehicle could tow a light line through the door and set up the first step of a possible alternate repair procedure.

After finding a toy auto of the right size at a local Norfolk store, Failla commenced rigging it for active naval service. "It was powered by two double-A batteries," he said, "and I taped the front end steering to keep the wheels aligned straight on the elevator track." He then removed the small toy driver's head and the racer's mock rear engine to allow for necessary clearance and towing.

Tying a shot line to the car, he released it on the track. To the cheers of the jubilant sailors on the project, the car successfully carried the line through the 39½ feet of the big door's interior. "Those at the other end were yelling 'I can hear it coming, it's coming' as it neared the end."

"All I had to do then," he said, "was tie the shot line delivered by the car to a one-half inch line and pull it through." The broken door track was then easily pulled out and a new one put in with the half-inch line while a few men held the door rollers up with crow bars. The job was complete.

According to Failla, the \$2.19 repair vehicle is now looked in the hydraulics shop tools locker in case it is needed again.

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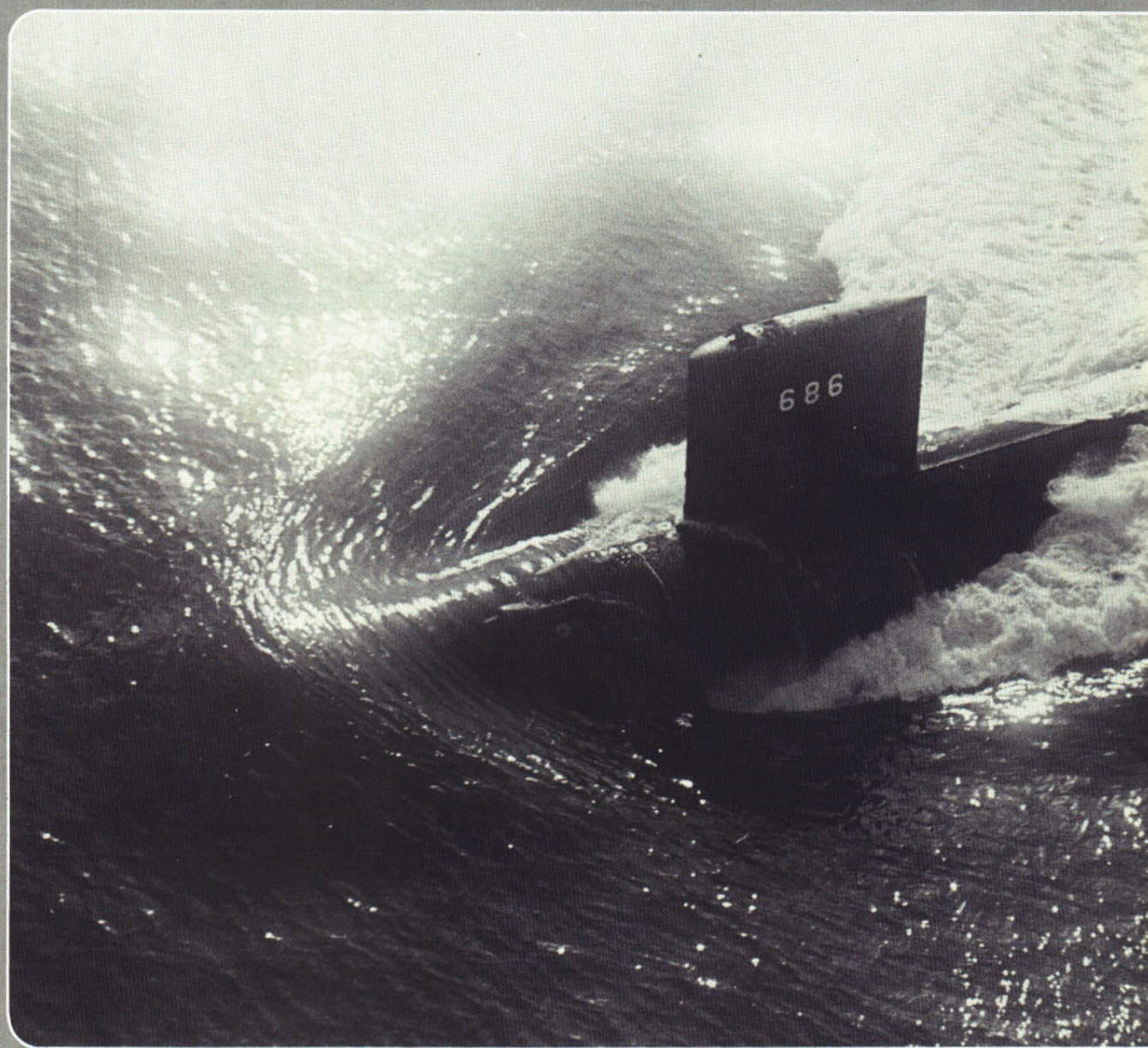
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Right: Two young recruits take a break from training at Orlando, Fla., to visit nearby Disney World.







# ALL HANDS

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FRONT AND BACK COVERS: This month, the Navy's policy of one basic uniform for all goes into effect. The cover photos symbolize pride in uniform as the Navy completes its 200th year. For more on the new uniform see the article starting on page 32.

INSIDE FRONT: The recently commissioned nuclear powered sub USS L. Mendel Rivers (SSN 686), underway during sea trials.







# ENTE

## Return Visit to the INDIAN OCEAN

USS *Enterprise's* return to the Indian Ocean for the first time in four years served to continue American presence in an area in which the Soviet Navy is becoming increasingly well known, as well as to demonstrate the feasibility of U. S. naval forces to operate in any international waters at will.

From the first day she entered the Indian Ocean, the ship was frequently in the news. The ship's deployment there left positive impressions due to a successful port visit to Mombasa, Kenya, and disaster relief operations for the island nation of Mauritius.

The Indian Ocean excursion not only helped to generate international goodwill, but also demonstrated once again the ability of *Enterprise* and her embarked air wing to operate in remote environments. Unlike the South China Sea, the Indian Ocean presented a number of major challenges. Throughout the cruise, flight operations were conducted without having a land-based airfield nearby in case of emergencies. Another major challenge was to prepare for delays that would result from longer and slower supply lines. A third was the ability to operate within the vicinity of nations whose awareness and concern for U. S. military presence were quite different from those of Indochina, and whose military capabilities were much different.

In addition to demonstrating the ability of the U. S. Navy to offset Soviet military presence there, and to meet all challenges, the deployment into the Indian Ocean provided many personal rewards for members of the *Enterprise-Air Wing 14* team. Not only did crewmembers have an opportunity to visit places seldom seen by most Americans, but many also had an opportunity to participate in disaster relief operations on the





# ENTREPRISE



island of Mauritius. Of course, as with most extended operations in a remote area, there were a few personal drawbacks, including infrequent mail service, and a difficulty in leaving the ship on short notice in an emergency.

At the time *Enterprise* was preparing for the Indian Ocean deployment, there was some question whether the ship would be returning to Subic Bay prior to her return to the U. S. To prepare for that possibility it was necessary to stock the ship with tons of extra supplies. High priority materials and equipment were airlifted in. Even extra liberty boats were brought aboard for use in ports where other boats might not be available.

*Enterprise* left Subic Bay on 7 Jan 1975, and four days later the ship entered the Strait of Malacca, a narrow and heavily traversed channel between Malaya

Facing page: A "diamonds of diamonds" formation during air show for Kenyan dignitaries. Center: USS *Enterprise* (CVAN 65). Below: RADM O. H. Oberg, departing Commander Carrier Group Seven, greets a Kenyan naval officer at a reception following ceremonies held aboard *Enterprise*. Photos by PH1 James Lumzer and PH1 R. C. Harrison, USN.





and Sumatra. More than 60 ships were seen during the one-day transit of the strait.

An unfortunate accident occurred on 13 Jan when an EA-6B electronic warfare aircraft crashed into the sea shortly after take-off from the ship. Three members of its four-man crew were rescued, two of them unhurt, one seriously injured, and one was lost.

The following day an F-14A *Tomcat*, the Navy's newest jet fighter, caught fire during flight, forcing the two-man crew to eject. Shortly after the plane crashed into the ocean, both crewmen were picked up by helicopter and were found to be unhurt.

For a detailed report on the F-14A *Tomcat*, see the following pages.

*Enterprise* crossed the equator at Longitude 84° 30'E on 15 Jan. This occasion marked one of the largest "Crossing the Line" ceremonies ever held. King Neptune and his Royal Court officiated over initiation ceremonies in which 3872 slimy pollywogs were converted into trusty shellbacks. In the accepted, formal and traditional manner, the pollywogs encountered a crew of crusty, free-swinging overseers, whose "special treatment," dunkings, and other indignities are best left to the imagination.

In addition to routine training operations, a number of activities were held aboard ship to break up the monotony of being at sea for days on end. Sporting events such as track and field races, rope climbs, tugs-of-war, weight-lifting, arm wrestling, a boxing smoker, pinochle and cribbage tournaments were held as part of competition for a "Captain's Cup" trophy.

Upon arrival in the vicinity of Diego Garcia on 18 Jan 1975, the ship's helicopters and C-1A carrier on-board delivery (COD) aircraft flew to the U. S. facility there and brought back tons of accumulated mail that had been flown in from the Republic of the Philippines.

A week later *Enterprise* reached an operating area

Top right: Marine color guard presents colors to begin Carrier Group Seven change-of-command ceremony, held on *Enterprise*, at Mombasa, Kenya. Right: Kenyan Navy personnel admire F-14A *Tomcat* aboard *Enterprise*. Facing page bottom: Kenya Naval personnel salute during change-of-command ceremony.



## NUCLEAR PROPULSION

It Combines Mobility • Flexibility • Capability

A combination of the flexibility built into her nuclear propulsion system and the capability of the system's operators and technicians enabled the aircraft carrier USS *Enterprise* to meet every one of her operational commitments during its 1974-75 deployment.

*Enterprise's* eight reactors constitute the most complex nuclear propulsion plant afloat and produce all the steam required by the ship's four main propulsion turbine engines. In addition, the steam is used by turbo-generators to produce electricity for the ship, by evaporators to produce water, by the catapults that

launch *Enterprise's* aircraft from her flight deck and by many other types of steam-powered auxiliary equipment.

Flexibility that was designed into the system enables maintenance work to be accomplished at sea without appreciably affecting the operational capability of the ship. At the same time, the high degree of training received by all personnel who operate or maintain the nuclear propulsion system makes it possible for most types of maintenance to be accomplished without outside assistance. On several occasions during this cruise,





in the Arabian Sea near the Persian Gulf, where she continued to conduct flight operations. While operating in this area, an unusually large number of Soviet vessels took a look at the Big E and what she was doing.

Leaving the Arabian Sea at the beginning of February, the ship headed south along the east coast of Africa, and on 4 Feb the U. S. ambassador to Kenya, Anthony J. Marshall, as well as several high-ranking Kenyan dignitaries, visited the ship.

*Enterprise* entered the port of Mombasa, Kenya, the next morning. It was necessary to anchor four miles away from the city because of the port's shallow water. Thus, the liberty boats brought aboard at Subic Bay were put to good use. For the next four days members of the crew took advantage of the opportunity to relax and enjoy the sights and sounds of the African continent, including tours and safaris into big game preserves.

Following the all-too-short visit to Mombasa, a message was received directing *Enterprise* to proceed to Mauritius, an island nation 500 miles east of the Malagasy Republic (formerly Madagascar). Mauritius had been struck a few days earlier by Cyclone Gervaise, leveling much of the island. The U. S. ambassador there described the storm as the worst to hit Mauritius since 1959.

Arriving at Port Louis, Mauritius, on 11 Feb, teams of men from *Enterprise* spent the next four days rendering assistance to both governmental and private agencies in numerous ways. Prior to the ship's departure, Ambassador Philip W. Manhard visited *Enterprise* and personally thanked the crew for its humanitarian efforts on behalf of the Mauritians.

After sailing from Port Louis on 15 Feb, *Enterprise* returned to the vicinity of Diego Garcia island where she again picked up mail and some supplies. The ship entered the Strait of Malacca on 21 Feb, and anchored in Singapore harbor on 22 Feb. After four days of rest and recuperation, the ship entered the South China Sea and continued on to the Philippines, arriving at Subic Bay on 5 Mar 1975, almost two months after leaving there.

major maintenance was successfully performed while underway.

The best example of the capability of *Enterprise's* propulsion system during this deployment took place in early February. On 9 Feb 1975, the Big E had completed a four-day visit to Mombasa, the major seaport on Kenya's East African coast, and was heading out into the Indian Ocean to continue the routine operations of the cruise. Shortly after leaving port, orders were received directing *Enterprise* and her task group to proceed at "best speed" to the island of Mauritius, located some 1600 miles to the southeast. Just three days earlier, Mauritius had been stricken by a devastating cyclone.

*Enterprise* completed that long transit in just over two days, recording an average speed of over 29 knots

(about 33 miles per hour). The Big E's conventionally powered escorts were left far behind.

At the conclusion of the 40-day Indian Ocean cruise, Captain Carol C. Smith, Jr., *Enterprise's* commanding officer, said to the crew, "The cruise demonstrated again the value of nuclear propulsion, enabling *Enterprise* to stay on station far from supporting bases for a long period of time, as well as to maintain a high sustained speed over a long distance while en route to Mauritius."

Completing major maintenance while underway and making a high-speed transit in a distant ocean are two recent contributions to the tradition of performance by *Enterprise's* nuclear propulsion system, which now has over 13 years of service and more than 850,000 miles of steaming to its credit.



# F-14 TOMCAT

## First Deployment with Enterprise



With the end of an extended deployment to the Western Pacific and Indian Ocean in sight, USS *Enterprise* and Attack Carrier Air Wing 14 have witnessed the successful deployment of the Navy's newest jet fighter aircraft, the swing-wing F-14A *Tomcat*. Flying the F-14s on their first operational deployment were the "Wolfpack" of Fighter Squadron 1 and the "Bounty Hunters" of Fighter Squadron 2.

The introduction of a new fighter aircraft into operational fleet squadrons is normally a slow process accompanied by numerous, unanticipated problems which severely limit the amount of flying. By comparison to its predecessors, the *Tomcat* rapidly progressed through the fleet introductory phase.

During the current deployment alone, VF-1 and VF-2 amassed a total of over 1700 sorties between them. This enviable record is the product of an advanced technology aircraft coupled with realistic long-range planning and, in the final analysis, a lot of hard work by the aircrews and maintenance personnel within the two squadrons. VF-1 and VF-2 have comprehensively documented their "lessons learned" throughout the cruise, and the experience of the first *Tomcat* deployment will be of invaluable assistance to future F-14 squadrons.

VF-1 and VF-2 operated the F-14 in the South China Sea, the Gulf of Tonkin, and the Indian Ocean, and conducted limited shore-based operations from NAS

Cubi Point, R. P. The period in the Indian Ocean was the longest sustained operation at sea of the deployment and proved conclusively that a carrier task force with F-14 aircraft could operate thousands of miles from major shore support facilities or air bases.

Although no actual combat missions were flown during this peacetime deployment, VF-1 and VF-2 flew daily training sorties designed to sharpen the fighter skills required of aircrews in combat. Gunnery, air combat maneuvering, radar intercept training and escort missions were flown day and night and frequently under adverse weather conditions. All missiles, including *Sidewinder*, *Sparrow*, and the new long-range *Phoenix*, were fired in realistic operational environments during sorties flown from *Enterprise*.

Numerous missions were devoted to air intercept training using the unique multiple tracking and long-range detection capabilities of the AWG-9 radar and associated weapons systems of the F-14A. The intercepts were controlled by the E-2B *Hawkeye*, an airborne early warning aircraft also deployed aboard *Enterprise*, and by air intercept controllers aboard *Enterprise* and other ships in the task group. A majority of these intercepts were conducted using the Airborne Tactical Data System (ATDS) with the E-2, or the Navy Tactical Data System (NTDS) aboard ships. The use of this digital data link system enables the completion of an intercept without the aid of conventional voice



transmissions. The F-14 crews have become proficient in this new tactical capability, which shows great promise for increased efficiency and security in the future.

The fleet superiority concept was introduced on this deployment to complement the introduction of the F-14A. Fleet superiority is a project to develop tactics and procedures for integrating air, surface, and subsurface assets against various naval and air threats. The principal motivating factor for the fleet superiority project was the efficient tactical integration of the F-14A/AWG-9/Phoenix system with other fleet systems. The project recognizes that to realize the full potential of the *Tomcat*, the tactical interfaces with such systems as the E-2B and EA-6B aircraft must be carefully defined. Tactical procedures were developed and the fighter readiness of VF-1 and VF-2 were evaluated in numerous fleet superiority exercises.

In addition to these areas of tactical preparedness, much experience was gained in the flight characteristics of the F-14, with the two squadrons amassing a total of over 2900 flight hours and 1600 arrested landings.

"The experience and proficiency gained by the *Tomcat* crews in operations aboard *Enterprise* were the final stroke to complete the successful picture of introducing the F-14 to the fleet," says Commander Jimmie W. Taylor, VF-2's commanding officer. "We have fully proven the F-14 in the most demanding of all aviation environments: carrier aviation."

The handling qualities of the F-14, such as its exceptionally slow-speed capabilities and quick-turning characteristics, were continuously explored in an effort to obtain maximum performance from the aircraft. The aircraft was routinely operated at speeds ranging from 110 to 120 knots for landing and slow speed maneuvering to speeds approaching twice the speed of sound.

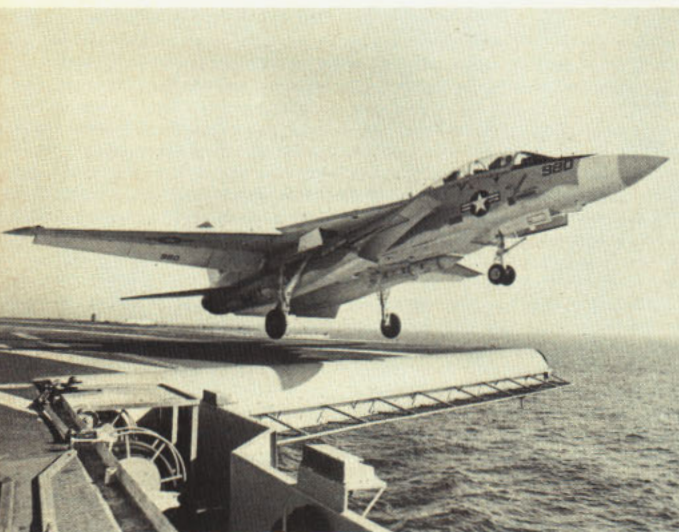
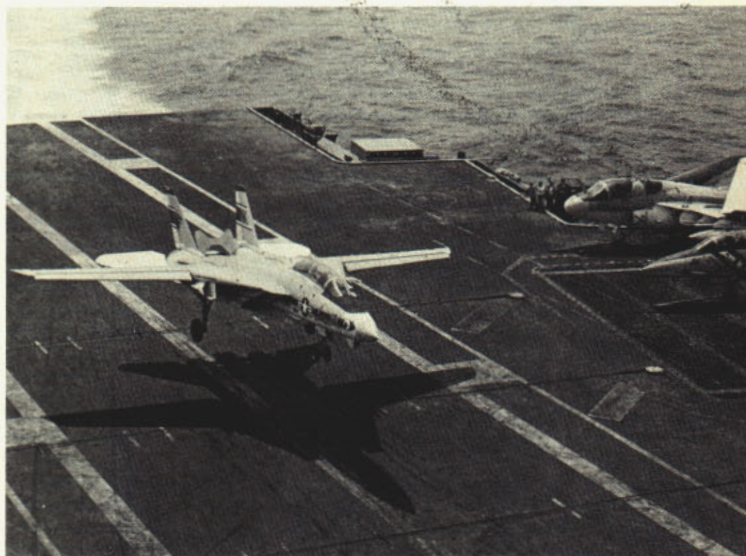
The first operational deployment of the twin-tailed fighter has additionally tested the maintenance and lo-

**Facing page:** F-14A *Tomcat* prepares to launch during suitability trials. **Below:** F-14 comes in for recovery aboard *Enterprise*. (Photo by PH3 Harold Brown). **Right:** F-14 undergoing carrier suitability testing. Photo by PH2 Terry C. Mitchell.

gistics system for supporting this sophisticated weapons platform. From every flight, extensive data was collected and analyzed for the purpose of improving the supportability, maintainability and reliability of the aircraft. "Line reports" were compiled by the squadrons for each at-sea period to summarize the major events, document the allocation of sorties, maintenance actions, and maintenance hours, and provide lessons learned. The reports were given wide distribution. Data analysts were also employed to compute and document such variables as maintenance actions per sortie and per flight-hour, and maintenance manhours for each flight hour. The maintenance effort of both squadrons steadily and significantly improved throughout the deployment and demonstrated that the F-14 is readily maintainable in the fleet.

Says Commander Dennis S. Strole, commanding officer of VF-1, "For the first time, the Navy has a fighter that matches the potential and versatility of the nuclear carrier, the threat, and the Navy fighter crews. Simply put, what we have found is that the F-14 has proven highly capable of performing all of its missions within the unique context of the carrier task force."

—LT Steve Miller, USN



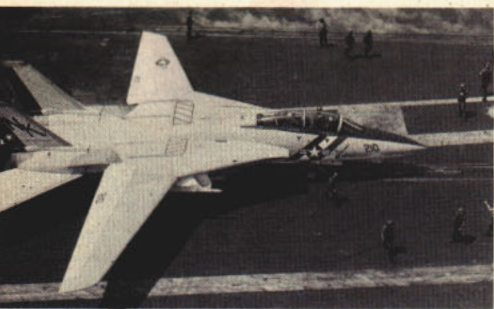
## ENTERPRISE SUPPORTS VIETNAMESE EVACUATION OPERATION

Aircraft from USS *Enterprise* flew 95 sorties in an 18-hour, day and night operation in support of the evacuation of Americans from Saigon on 29 and 30 April 1975. The primary mission for most aircraft from the Big E was to provide air cover for the helicopters ferrying evacuees from Saigon to other U. S. aircraft carriers standing by in the South China Sea.

Throughout the operation, *Enterprise* was stationed about 90 miles from the South Vietnamese coast, well outside the country's territorial waters.

No evacuees were brought aboard *Enterprise*.





From the Enterprise Crew . . .

# Questions &

## **Q. How do you feel about the Indian Ocean operation?**

**LTJG Richard C. Barkell, VF-1 intelligence officer:** I personally feel that our deployment to the Indian Ocean was a continuation of recent U. S. naval operations exhibiting the mobility of a carrier task force. In addition, recent increased Soviet naval presence in major Middle Eastern oil transportation sea-lanes necessitate a show of the United States' flag to indicate our capabilities should the need arise. *Enterprise's* quick response to the disaster-stricken island of Mauritius was indicative of our quick-reaction capability.

**LCDR Ed Allen, VF-1 naval flight officer:** The *uss Enterprise* task force deployment to the Indian Ocean was a unique experience and highly successful. *Enterprise* and Air Wing 14 conducted day and night flight operations over the calm seas in a no-divert environment. Other than the no bingo (divert landing field) restriction, air operations were conducted pretty much as normal. The deployment demonstrated the advantages of a carrier task force to operate out of normal range of land-based support and emergency divert fields.

**CWO2 Downs:** From a maintenance standpoint, I had some misgivings. Fortunately, we were able to fly enough to maintain crew proficiency without going back to an extensive training cycle.

## **Q. Was there anything particularly different about operating in the Indian Ocean?**

**LTJG Dennis Ferrell, VAW-113 pilot:** One thing, the weather seemed to be a lot better than in the South China Sea.

## **Q. How do flying conditions in the Indian Ocean differ from conditions in the Med. or WestPac?**

**CDR Robert P. Nichols, VA-97 executive officer:** They were the best I've ever seen. The clear skies and calm sea conditions greatly relieved concern over the absence of bingo fields.

**LT Robert P. Vincent, VF-1 pilot:** It is characterized by smooth water, good weather and clear skies. Flying a routine training mission did not differ from any other mission flown elsewhere except for the ever-present fact of no bingo field. This did not affect the capabilities of the F-14 but it did have a slight psychological effect on the aircrews. Knowing you have to get aboard and there is no other place to go puts that little extra excitement into the routine mission and especially into the night recoveries.

## **Q. What did you find to be the E-2 Hawkeye**

## **aircraft's primary mission in the Indian Ocean?**

**LTJG J. P. Simpson, VAW-113 naval flight officer:** Even though airborne early warning continued to be significant, emphasis of the *Hawkeye's* mission shifted from anti-air warfare to surface surveillance. The E-2's long-range radar and high altitude were ideal in the Indian Ocean for detecting and tracking surface contacts long distances away from the carrier task force. Using A-7 attack aircraft, we were able to control several sections over many surface targets, thus providing the ship with an accurate surface picture hundreds of miles from its location and beyond its radar horizon. It is particularly important in this age of long range antiship missiles to identify and track those ships that are a possible threat to the carrier task force.

## **Q. How did operations go with the F-14 "Tomcat" on this deployment?**

**LTJG Simpson:** I think we have proven that the E-2/F-14 team is a viable Fleet air defense concept. VAW-113 is the first operational E-2 squadron to work out the compatibility problems between the *Hawkeye* and *Tomcat*. We have greatly improved the survivability of the carrier task force in a hostile air environment by combining the search, detection and intercept capabilities of the two aircraft. For the first time the E-2 has the capabilities of automatically receiving the targets visible to the F-14's radar, thus effectively increasing the detection range of the carrier task force to distances unheard of before and giving the task group commander more time to formulate his response.

## **Q. Was surveillance of merchant shipping as well as warships one primary mission in the Indian Ocean?**

**CDR Nichols:** Yes. The sssc (surface, subsurface, surveillance and control) mission was quite interesting. It demonstrated the wing's ability to identify all surface shipping in a 150-mile circle (about 70,000 square miles) in under two hours, photographing most of the ships.

## **Q. How did not having regular supply lines affect the operations of the E-2 in the Indian Ocean?**

**LTJG Simpson:** Actually, not very much. We had excellent aircraft availability, primarily because of our excellent maintenance department. It should be noted that we were forced to sacrifice one aircraft for parts to keep the others operating.

## **Q. What was the significance of having no bingo fields during this operation?**

**CDR Nichols:** It was my first encounter with sustained flight operations without the support of a



## On a Photo Safari In Kenya

From top: Enterprise crewman photographs a large anthill common to Tsavo National Park, and some of the park's inhabitants: baboon, giraffe, zebras and elephant. Photos by JO3 D. N. Fulghum, USN.

# Answers

nearby bingo field. That was partly the reason for such operations, to show the unique capability of a carrier task force to bring its power to bear in any part of the world without relying on shore-based installations.

**Q. Performance is often a result of good morale. How did you find morale on extended operations in the Indian Ocean?**

**CDR Nichols:** Morale remained high because we were flying regularly and everyone felt that we were accomplishing our mission.

**Q. How do you feel the extended operating period, with little liberty, affected morale?**

**CWO Downs:** We've never had a problem so long as the crew knew the objective of the mission. Our crew has always performed at 110 per cent. The amount of work helped too because we were able to stay busy. While being in such an isolated area, receiving mail becomes about the most important aspect of life.

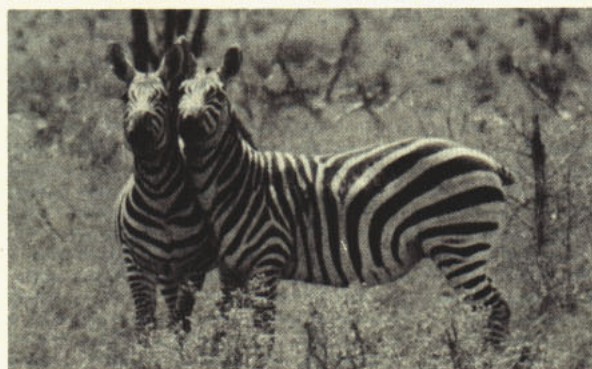
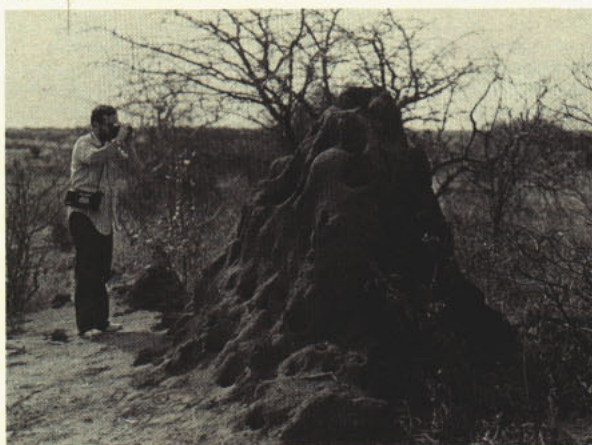
**Q. What was liberty like in Mombasa, Kenya?**

**LT Vincent:** We enjoyed our stop in eastern Africa's major seaport. Although it isn't a big city, plenty of good sights, good food and some not-so-cold beer were available. Probably the most interesting time to be had in Kenya was a visit to Tsavo National Wildlife Park via one of the local safaris. In two days we covered over 500 kilometers in the 8000-square-mile game refuge and took many slides of the wildlife.

**LTJG BARKELL:** The port call at Mombasa was certainly pleasant. The country offers a diverse array of sightseeing and recreational activities and as a result is frequented by many vacationing Europeans. The safaris to various game preserves were a definite highlight of our visit. Hopefully, future carrier deployments to the Indian Ocean will open up additional liberty ports for visits.

**AT2 James E. Boyd:** Here's how I would sum up liberty in this spot—the beaches are among the most beautiful and peaceful I have ever had the pleasure to see and sink my feet into with their white, cooling sand. And in the nearby countryside—the elephant, lion and gazelle roam free and unhindered. This combination was at once exhilarating and yet peacefully serene. I would wish to go again to this beautiful little country of Kenya.

The thing that struck me most about the Indian Ocean was the stillness and quietness that seemed to pervade when we weren't in flight operations. The temperature was a little hotter than in the South China Sea, but the calm seas and no-wind conditions were almost eerie.





# The Navy's Role in the EVACUATION of VIETNAMESE REFUGEES

The role of the U.S. Navy in the rescue and evacuation of American and Vietnamese citizens from South Vietnam was a heroic and humanitarian endeavor. President Ford, in a message to the fleet via the Secretary of Defense, said of the evacuation:

*"Please convey to all personnel involved in the Vietnam evacuation operation my appreciation and respect for their superb performance."*

*"This operation was carried out under extremely adverse conditions. Its smooth and orderly accomplishment reflects great credit upon the men and women who participated in its planning and execution."*

*"I also join with their comrades in mourning the loss of those gallant men who gave their lives in this humanitarian task. To their families and loved ones goes our deepest sympathy."*

*"Their sacrifices, as well as the courage and determination of all participating units, stand as a final example of the selfless dedication which has typified the performance of our armed forces throughout our involvement in Indochina."*

*"They have my gratitude and that of the American people for the successful accomplishment of this difficult mission."*

The untiring efforts of the Navy and Marine Corps personnel who assisted in that final exodus cannot be adequately summarized in a few short paragraphs. The whole story of the evacuation—of the ships and men who made it possible—will take weeks to tell because of the complexity of the operation and the number of people involved.

What follows is a series of capsule summations of "how it was" as seen mainly through the eyes of some people who were there.

## **First U. S. Ships To Pick Up Refugees**

The amphibious cargo ship USS *Durham* was with the first U.S. Navy ships to pick up refugees. *Durham's* crew, both Navymen and Marines, worked day and night during the evacuation to bring aboard and care for more than 3800 refugees rescued near Phan Rang. Included among those rescued were some 80 which had been evacuated by USS *Frederick* and then transferred to *Durham*.



For two days and two nights, *Durham's* holds were transformed into makeshift dormitories for the homeless people. Food was specially prepared and medical teams treated the sick and wounded.

While the *Durham* crew cared for the refugees aboard their ship, *Frederick*, *Blue Ridge* and *Dubuque* did their part by providing food which they had aboard to U. S. Military Sealift Command merchant ships carrying thousands of other refugees. Foodstuffs were transferred by ships' boats and helicopters. The refugees had been forced to remain aboard the merchant ships for long periods because of lack of unloading facilities at the designated safe havens.

The crew of USS *Dubuque* was particularly instrumental in helping refugees at Phu Quoc. Her boats were used to not only transfer food and water to the helpless evacuees, but also to transport medical teams to the U. S. ships waiting to be offloaded.

Together the crews of these four ships, working virtually around the clock, saved many refugee lives which otherwise might have been lost.

Given a new lease on life, 3586 refugees were transferred on 5 April from the amphibious cargo ship *Durham* to *Trans Colorado*. The movement of the displaced persons to *Trans Colorado*, an American heavy lift merchant ship, was made off the coastal city of Vung Tau.

The transfer of Vietnamese, who were carried to safety, came after *Durham* spent Thursday and Friday taking evacuees aboard near Phan Rang.

Bleary-eyed and weak, the Vietnamese were given hot meals, shelter and emergency medical care aboard



*Durham*. Navymen and embarked Marines on the ship worked around the clock to tend to their needs. The transfer went smoothly as the revived evacuees were shuttled from the Seventh Fleet amphibious ship to the merchant vessel.

Before the transfer, the refugees received a hot meal and were provided a bag of rice to take with them. *Durham* also sent some canned foods and fruits to *Trans Colorado* to help feed the refugees. Each family thanked the American Navymen and Marines as they left *Durham*.

The *Durham* crewmembers continued to show their concern for the welfare of the refugees as they formed a human chain to help lift the Vietnamese and their belongings aboard *Trans Colorado*.

USS *Blue Ridge* also transferred some 11,000 meals to *Trans Colorado* for use by the evacuees from *Durham* and other refugees that were taken on later.

### Helicopter Airlift Aboard *Blue Ridge*

All eyes turned to the horizon as two helos made their way to *Blue Ridge*. They were Air American helicopters, full of women, children and what few belongings they could gather together before fleeing Saigon. The passengers were unloaded and sent through evacuee processing stations set up on the main deck.

Facing page: Nhu-Dung, age 14, serves rice to fellow refugees at Asan, Guam. Photo by PH2 K. Hacka. Below: Vietnamese men carefully pass a child from boat to men of USS *Durham*, (LKA 114). Photo by PH3 H. Brown.



In order to make more room, another helicopter which had carried a Vietnamese pilot to safety was lifted from the main deck and flown a couple of hundred feet from *Blue Ridge*, where it was ditched.

Suddenly the sky seemed to be full of helicopters, all of them crammed with refugees.

With rotors turning, the second Air American helo prepared to return to Saigon for more evacuees. One of the hovering helos, only a few feet off, disregarded flight deck crewmen's orders to move away. Despite the efforts of the crewmen frantically waving their arms trying to ward the helo off, it continued toward the landing platform. At the last possible moment, the crew headed for cover, knowing what was going to happen. Shouts came from every direction, "Hit the deck! Hit the deck!" Sailors threw themselves over Vietnamese children, protecting them with their bodies.

The South Vietnamese craft set down on the very edge of the port side, but still there was not enough room. Rotor blades clashed together and exploded into thousands of pieces. The helo jumped and twisted viciously as pieces of the blades hit the flight deck. Some 30 *Blue Ridge* crewmen jumped up from the main deck and ran to the battered craft from which they began carrying children and helping the terror-stricken passengers to safety.

As soon as the deck was cleared, the other helicopters came in to unload their passengers. There was no room to keep helos aboard. As soon as they were unloaded, they were flown off the ship and ditched into the sea. Their doors were chopped off to allow the pilots an easy exit.

One Vietnamese pilot repeatedly faced death as he climbed into the cockpit of five copters in a row and dropped himself and the chopper into the sea. Each time, he was picked up by boat crews and returned to the ship.

If the helos weren't ditched, they were pushed over the side, breaking off antennas as they plunged into the sea. Throughout all of these events, it was a wonder that not one was injured. Yet not one pilot or any of the crewmen working on the main deck was hurt in the rescue operation.

All through the frantic landings and ditchings, the voice of the commanding officer, Captain William D. Hart, would come over the general announcing system and say, "You're doing a marvelous job. I'm proud of you all. Just remember to watch yourself, be careful and stay cool."

Over 40 ships and 70 helicopters took part in the world's largest helicopter evacuation. *Blue Ridge* was the hub of the massive airlift that brought thousands of Americans and Vietnamese out of the beleaguered city of Saigon.

### Helping Hands: Preparations

"I can't say enough about the tireless and selfless efforts that our Navymen and Marines have expended to relieve the suffering of these people who have been forced to flee their homes," said Rear Admiral Donald B. Whitmire, evacuation coordinator.

That task began on Easter Sunday when ships of the Seventh Fleet Amphibious Force, responding to President Ford's directive to get aid to Vietnam refugees, sailed for the coastal country. USS *Blue Ridge* (LCC



# Refugee Evacuation

19) and USS *Dubuque* (LPD 8) sailed from Okinawa while USS *Durham* LKA 114) and USS *Frederick* (LST 1184) got underway from Subic Bay in the Philippines.

Throughout the ships a special sense of purpose was evident as sailors and Marines carried out their duties. Commissarymen kneaded dough until the small hours of the morning as loaf after loaf of piping hot bread emerged from the ships' ovens. Hospital corpsmen inventoried medical supplies and stocked shelves.

Early Thursday afternoon, 3 April, the purpose of the voyage became a reality as a 20-foot South Vietnamese motor launch carrying 21 refugees plowed through the choppy seas toward *Durham*. The humanitarian mission was underway and from that moment it took on a meaning far deeper than any duty assignment could instill in that crew.

The first group of 21 refugees were hardly settled when a flood of their countrymen followed in sampans and junks. Boats of every size, shape and description converged on the amphibious cargo ship. Each was filled with men, women and children carrying what they could of their possessions. Old and young, some with suitcases or bundles, some clutching nothing but hope of a new life.

As *Durham* moved in closer to shore, she seemed to ignite a spark of hope into the hearts of the refugees. They crowded around the ship, and pandemonium reigned as boats jockeyed for position. American sailors stood on the accommodation ladder to help as the boats came alongside.

Getting the people aboard wasn't an easy task as the small craft rocked and rolled in the heavy seas. The occupants were all soaked to the skin—but they didn't seem to mind.

## Military Sealift Command

President Ford's order of 29 March for "American Naval Transports and Contract vessels to assist in the evacuation of refugees from the coastal seaports" of northern South Vietnam had an immediate effect on several ships under contract to the Navy's Military Sealift Command.

A small fleet of cargo ships, tugboats and barges operating near Vietnamese waters began an around-the-clock evacuation of refugees. Under difficult and hazardous conditions, the participating ships rescued thousands of South Vietnamese during the first days of operation.

SS *Pioneer Contender*, operating under an MSC contract, USNS *Sgt. Andrew Miller*, a Navy-owned transport, and SS *Trans Colorado*, a Sea Train Line ship, rescued more than 35,000 refugees from Da Nang alone.

The refugees were ferried from shore by tugs, barges

Counterclockwise, from left top: Boatswain's Mate 2nd Class T. Elsbree, USS *Durham*, takes care of Vietnamese baby while search is made for its mother who was separated from it during evacuation. Photo by PH3 H. Brown. Dr. Kenneth Cox administers to a Vietnamese baby. Photo by PH2 K. Hacka. Loon Keefer rests with her son, John, Jr., the first refugee baby born on Guam. Photo by PH2 K. Hacka. Grande Island and its refugee tent cities as seen from the air. The three tents in center are football-field size. Photo by PH1 S. Harris. Guided missile destroyer USS *Benjamin Stoddert*. Far right: A Vietnamese woman is escorted from helicopter across the deck of USS *Durham*. Photo by PH3 H. Brown.







and any other small craft available. Additionally, many more escaped aboard towed barges as the Communist forces moved ever closer on their trek down the coast.

USNS *Miller* rescued more than 15,000 refugees while USNS *Greenville Victory* transported 7000. By the end of the first week, nine MSC ships, four tugs and four Navy Amphibious Transports had been committed to the humanitarian evacuation.

### The Ships That Helped

The U. S. Navy ships supporting the humanitarian evacuation and their mission:

- Evacuation/medical assistance and emergency supplies—USS *Durham* (LKA 114), USS *Dubuque* (LPD 8).

- Emergency supplies and medical assistance/care—USS *Blue Ridge* (LCC 19), USS *Vega* (AF 59), USS *Frederick* (LST 1184), USS *Benjamin Stoddert* (DDG 22), USS *Cochrane* (DDG 21).

MSC ships and ships under MSC contract involved and the number each evacuated:

USNS *Sgt. Andrew Miller*—15,300; USNS *Greenville Victory*—7000; SS *Pioneer Commander*—16,000; SS *American Challenger*—10,000; SS *Trans Colorado*—12,000; SS *Greenport*—7000; *Boo Heug Pioneer*—5000; *Chitose Maru*—2600.

Almost all refugees were transported from shore to ships by small vessels, tugs with barges in tow, and Korean LSTs. Other Navy and MSC ships which aided in the evacuation may have been omitted, because reports were not complete as ALL HANDS went to press.

### Birth at Sea

On 3 May, two U. S. Navy hospital corpsmen delivered a baby boy aboard a refugee-packed ship en route to Grande Island in Subic Bay. Hospital Corpman 1st Class James Cooley and Hospital Corpsman 2nd Class Larry Lyons delivered the child beneath a makeshift





## Refugee Evacuation

shelter on the deck of USNS *Truman Kimbro*, a MSC ship.

"We were out in the middle of the Pacific Ocean, so there was nothing we could do but deliver," said Cooley. "We roped off a place on the port deck, cleaned it and put up ponchos for shade," explained the corpsman.

"The ship's sickbay was full and overflowing."

Lyons, who had never delivered a baby before, just followed Cooley's instructions and "took things as they came." "The childbirth kind of made the trip special as far as I'm concerned," said Lyons. "It made me feel real good to see the mother and baby all right."

### Last Warship to Leave Vietnam

The last U. S. Navy warship to leave Vietnam arrived in Subic Bay, Republic of the Philippines, on 6 May, carrying 177 South Vietnamese refugees. Among the refugees aboard USS *Benjamin Stoddert* were remnants of the crew of a South Vietnamese navy gunboat.

"We received an SOS from a PGM (gunboat) that said they were out of fuel and leaking badly," said the ship's captain, Commander Peter Hekman. "When we found the boat in the Gulf of Siam, it was in bad shape." Six officers, one woman, four children and eight enlisted sailors were aboard.

After this rescue, the Pearl Harbor-based destroyer spied a fishing boat in the South China Sea. Its occupants, 158 people of whom 80 were young children, were out of fuel and food. *Stoddert* took them aboard







and proceeded to the American naval base in Subic Bay.

### Building a Process Center

During the height of the massive airlift, almost 5000 evacuees arrived on Grande Island in the mouth of Subic Bay. They were housed in tents and the island's few cabins while being processed for eventual entry into the U. S.

Before the Vietnamese refugees arrived, Marines and Seabees erected hundreds of tents, built a chain link security fence, installed security lights and built almost 200 toilets on Grande Island. The massive undertaking was a part of Operation New Life and Project Frequent Winds, the evacuation and processing of Americans and Vietnamese.

The Battalion Landing Team (BLT) 1/4 Marines, based at Okinawa, and the Seabees from CBMU 302, based at Subic Bay, and Port Hueneme, Calif.-based Naval Construction Battalion 40 worked side by side throughout the operation.

### Tent City

The concerted efforts of military and civilian volunteers from all over Guam were responsible for erecting "Tent City," formerly Orote Point, Guam. Working for two straight days without rest, Navy Seabees drove more than 18,000 tent stakes through the coral layer, just three inches below the island's surface. The result was the erection of more than 1000 14-man tents which housed civilian volunteers, military personnel, Red Cross workers and 6000 Vietnamese refugees.

While Seabees erected temporary housing, a portable kitchen fed 1000 persons an hour and Red Cross workers assisted refugees in contacting and receiving telegrams from their relatives and sponsors located around the globe.

Nine teams of 50 Seabees each worked nonstop to erect the facilities on the island. Their humanitarian efforts were part of Operation New Life—the military coordinated feeding, housing and clothing of Vietnamese evacuees—under the command of Admiral Noel A. M. Gayler, Commander in Chief, Pacific.

This roundup of what happened in the Vietnam evacuation is by no means all-inclusive. There are hundreds of incidents deserving of mention that simply can't be included in this account owing to the limitations of space. In future issues of ALL HANDS we hope to cover in more detail the role of the Navy in this spectacular effort.

—Story by the journalists and public affairs officers who served during the evacuation.  
Collected and coordinated by JO2 Dan Wheeler.



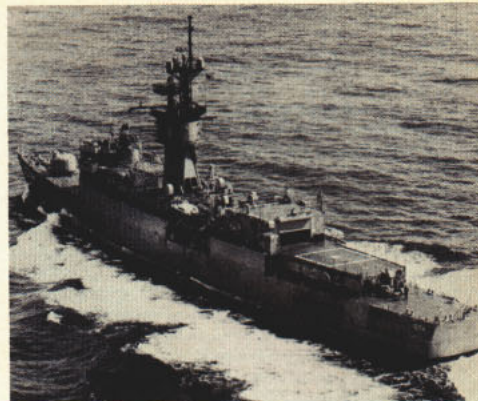
Facing page left: "Tent City" at Orote Pt., Guam, springs to life as thousands of South Vietnamese refugees set up housekeeping. Photo by PH3 S. Stuart. Facing page top: After 49 hours of work, a weary sailor seeks respite among a pile of tents in an abandoned field now coming to life with more than 6000 refugees. Photo by PH3 S. Stuart. Left: Vietnamese refugees aboard a landing craft from USS Durham, en route to merchant marine ship Trans Colorado. Photo by PH3 H. Brown. Above: Refugees serve refugees in a field kitchen at Asan, Guam. Photo by PH2 K. Hacka.



# The Mayaguez Incident

In Today's World—

An Example of the Importance of Seapower in a Crisis . .



It was a classic display of seapower and a reaffirmation of the freedom of the seas. It couldn't have come at a more significant time.

The freeing of the American container ship *SS Mayaguez* and her 39-man crew from the midst of her Cambodian captors the night of 14 May recalled an action that occurred 171 years ago—the performance of Stephen Decatur and his shipmates who burned the frigate *Philadelphia* in Tripoli harbor on 14 Feb 1804, to keep it out of pirates' hands.

The sagas of *Mayaguez* and *Philadelphia* also have another parallel. They were both victims of actions that violated the laws of the sea, taken by people who banked heavily on Uncle Sam sitting back and doing nothing. Lord Nelson called the *Philadelphia* incident "the most daring act of the age." The most recent operation involving *Mayaguez* was an achievement combining heroism, teamwork and mobility. The Navy, Marine and Air Force units involved conducted a "cutting out" expedition just as such a venture should be accomplished: fast, successfully and with a minimum of casualties.

It all began the morning of 12 May when the unarmed *Mayaguez*, en route from Hong Kong to Singapore, with a stop at Sattahip, Thailand, was fired upon and seized by the crew of a Cambodian gunboat in the Gulf of Siam. The capture took place 60 miles off the Cambodian mainland and about eight miles from the small, rocky Tang Island, claimed by both Cambodia and South Vietnam.

A spokesman for Sea-Land Service, Inc., owner of *Mayaguez*, said the vessel was carrying a general cargo in 35-foot and 40-foot containers. The 14,500-ton, 480-foot-long ship normally operates between Hong Kong, Thailand and Singapore, he added.

Calling the seizure "an act of piracy," President Ford met with the National Security Council. He also instructed the State Department to demand the immediate release of *Mayaguez*, adding that "failure to do so would have the most serious consequences."

While the United States took immediate action on the diplomatic front, it did not stop there. There was no response to the early efforts to communicate with the Cambodian government. The Khmer Rouge regime, the former rebel Cambodian government, which had taken over on 12 April, had to a large extent isolated itself from the outside world. At the

same time it was expanding its territorial claims in an ocean area believed to contain undersea oil deposits. Foremost in the minds of Americans was the threat of another *Pueblo* incident.

Shortly after word of the *Mayaguez* seizure reached Washington, U. S. reconnaissance planes were ordered into the area. About the same time, the aircraft carrier *USS Coral Sea* (CVA 43) was diverted en route to Australia and ordered to the Gulf of Siam. Other Seventh Fleet ships, including destroyers, were also directed to steam toward the gulf. Simultaneously, U. S. Marines were alerted.

The night of 13 May, President Ford called for a meeting of the National Security Council, the third time in two days, to consider options on how to recover the merchant ship *Mayaguez*, still held in the Gulf of Thailand, 30 miles off the coast. In the meantime, American aircraft continued surveillance which was made difficult at times by heavy cloud cover. During this reconnaissance, a Navy P-3 *Orion* dove through the cover for a better view of *Mayaguez* and subsequently took one round of small-arms fire, but no one was injured.

Finally came President Ford's order for air strikes, to coincide with Marine landings on Tang Island, and a Navy effort to regain the merchant ship *Mayaguez*. The three-pronged assault was underway.

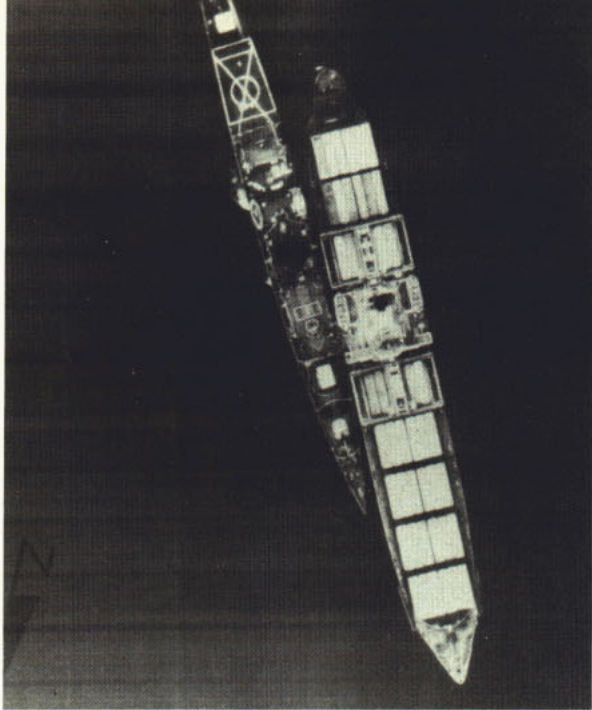
Marines were helicoptered to *USS Harold E. Holt* (FF 1074) and then stormed over the rail when *Holt* drew alongside *Mayaguez*. The quick action had taken the captors by surprise—still-warm food was the only sign of their earlier occupancy.

Other Marines, flying in helicopters from bases in Thailand, landed on three-mile-long Tang Island under fire from Cambodians. Jet fighter-bombers from *USS Coral Sea* also attacked the island in support of the Marines.

This Marine operation came hours after U. S. Air Force planes destroyed several Cambodian patrol boats. American A-7 jets and AC-130 gunships operating from bases in Thailand strafed the patrol

Above: *USS Harold E. Holt* (DE 1074). Right from top to bottom: aerial photo taken as *USS Holt* pulls alongside *SS Mayaguez*. U. S. Marines board *Mayaguez*. Photo by YN3 Michael Chan. Marines raise American flag aboard *Mayaguez* after her rescue. Photo by YN3 Chan.





boats after there were "indications that the Cambodians appeared to be attempting to move captive American crewmen from the ship and the island to the mainland," the Pentagon said. The *Mayaguez* crewmen were known to have been taken off their ship to the island soon after their capture and the Marines were seeking to rescue any still on the island.

It was learned later, however, that *Mayaguez* crewmen had been taken off the ship to Tang Island, but were moved again, first into the port of Kompong Som and then onto another island named Rong, by a small Cambodian gunboat that escaped destruction when an American pilot, swooping down on the 32-foot craft, spotted what he thought were "Caucasian faces" and the craft was permitted to continue to Kompong Som. The jets destroyed the three other gunboats.

The Cambodian government had not yet responded until the U. S. military operations were well underway. The United States received the first Cambodian government statement—after the air strikes and after *uss Harold E. Holt* had come aside *Mayaguez* and Marines had boarded her. The statement offered to return *Mayaguez*. There was no mention of returning the crew.

Shortly after 0700, Thursday morning, 15 May, the first Marines landed on Tang Island.

At 0820 that same morning, the crew of *Mayaguez* was hurriedly loaded into a small boat with five Thai sailors and told to start on their way back to *Mayaguez*. The U. S. forces were not notified of their departure.

While the American merchant ship crew in the small Thai fishing boat were heading back to the location of *Mayaguez*, the first of two waves of Navy jet fighter bombers that had taken off from the attack carrier *Coral Sea* were in the process of bombing the Cambodian airfield at Ream near Kompong Som, according to Pentagon records. Other American jets hit warehouses and railroad marshaling yards in Kompong Som port, oil refineries and oil storage facilities three miles north of the city and a naval barracks at Ream.

At 1045, the guided missile destroyer *uss Henry B. Wilson* (DDG 7) spotted a small boat flying white flags. It was the *Mayaguez* crew and the five Thai fishermen, whose boat had been captured earlier by the Cambodians. They were picked up by *Wilson* shortly thereafter.

The 14-hour *Mayaguez* operation ended successfully at 2110 Cambodian time, Thursday, 15 May, when helicopters, under protection of aircraft and naval gunfire, lifted the last Marines off Tang Island and onto the deck of *uss Coral Sea*.

It was achieved not without sacrifice, but it was achieved in a way that won the plaudits of a grateful nation.

To the members of the Armed Forces who had participated in the action President Ford said, "I wish to express my deep appreciation and that of the entire nation to the units and the men who participated in these operations for their valor and for their sacrifice."





## USS Camden On Deployment In The Indian Ocean

HELP FOR MAURITIUS

**"Instead Of  
R & R  
It Was  
RELIEF  
And  
REHABILITAION"**





Technical aid and muscle, promptly provided by the Navy in disaster relief operations for the battered nation of Mauritius, struck by cyclone winds raging in from the Indian Ocean "really brought to light a whole different understanding of the United States." The reaction to the U. S. and to the Americans themselves was extremely favorable, says the commanding officer of the first ship to arrive on the scene.

As Captain Donald L. Felt spoke, the fast combat support ship, *USS Camden*, was plowing through rain and choppy seas. Her heading was north from Long Beach to Bremerton, Wash., after a six-month cruise which was highlighted by two Indian Ocean deployments.

It was in the Indian Ocean, earlier this year, that *Camden* sailors had looked forward to three days' liberty in Port Louis, Mauritius. It would be their last R&R stop before turning homeward.

But the island nation, which lies in the southern hemisphere about 1200 miles off the coast of east Africa, was raked by winds up to 174 miles per hour that

day and the day after in one of the worst cyclones of recent experience.

In its wake, the storm left at least seven people dead, 1000 homes and buildings damaged or destroyed, and at least a third of the nation's sugar crop in ruins. All electrical power was lost, internal communications were disrupted, and public water services were contaminated.

Damage was estimated at \$200 million.

"By the time we arrived," says CAPT Felt, "it was obvious that we weren't going to get much rest and recreation. Instead, we provided what relief we could."

Although a lot of muscle was used in clearing giant banyan trees blocking the island's roads and clearing downed telephone and power poles, much of *Camden's* assistance was technical, says her skipper.

"Our electricians and internal communications experts went ashore and teamed up with Mauritian telephone men. They made line repairs throughout Port Louis."

Meanwhile, *Camden* electronics technicians worked with British Royal Navymen stationed ashore near Port Louis to repair the communications and navigation systems for the island's single airport.

"The airport was back in operation within 24 hours of our arrival," points out CAPT Felt.

At the same time, "our carpenters and damage control experts were sent to work on a large hospital

Facing page top: Gauges in fuel control area are carefully watched. Photo by PH3 H. Mendelson. Facing page bottom: *USS Camden* combines the capabilities of an oiler, ammunition ship and stores ship. Photo by JO3 D. Friesen. Below: Over 1000 homes were destroyed or damaged in the storm that swept across Mauritius. Photo by SN J. Scarborough.







ashore. Several roofs had been torn off by the storm."

While repairs continued, *Camden* sailors donated some 80 pints of blood.

"The electrical power was out and remained out for most of our four-day visit in Mauritius," says CAPT Felt. "There was no refrigeration and the city's blood bank had been completely spoiled. The blood was certainly enough to take care of any emergencies that might arise."

The fact that *Camden* was able to drop anchor in Port Louis and immediately begin helping to clean up and repair the stricken island nation will certainly "benefit our posture with the Mauritians," says the *Camden* CO.

He also notes that it is significant that by hard steaming, *USS Enterprise* and the remaining members of her task group were able to reach Port Louis three days after *Camden's* arrival there. Those ships allowed the support ship to keep her homeward-bound schedule.

CAPT Felt views Mauritius relief efforts by U. S. Navy units with a mixture of satisfaction and the feeling that they were a small, virtually unnoticed drop in a very large ocean.

As he puts it, "In Mauritius particularly, the disaster relief that was done . . . really brought to light to the population of the country a whole different understanding of the United States and of the Americans themselves which was extremely favorable.

"It may wear off," he concludes. "It may not be widely disseminated amongst the other countries. But you certainly can't deny that it has a very positive effect."

#### Deployment in the Indian Ocean

Seated in his sea cabin on board the empty, lightly rolling *Camden*, CAPT Felt recalls his ship's two deployments into the Indian Ocean.

"The second deployment was to accompany and

support *USS Enterprise*, the nuclear cruiser *Long Beach* and two accompanying destroyers," he says.

"This was somewhat different from the first deployment in that the first one was for the express purpose of participating in Exercise Midlink '74, sponsored by the Central Treaty Organization (CENTO). We went to Midlink, participated in the exercise and we came back out of the Indian Ocean into the Pacific."

That CENTO exercise, in November 1974, involved a U. S. carrier task group joining forces with the United Kingdom, Iranian and Pakistani Navy ships in the Arabian Sea arm of the Indian Ocean.

The captain looks back at the exercise as being "very unusual" from *Camden's* point of view.

"Because of our maneuverability," he recalls with a smile, "we were able to act as an opposing warship as part of a surface unit in which we also had British and U. S. ships and an Iranian destroyer."

At the same time *USS Camden* performed another role, refueling ships from each of the participating nations. "That worked out just fine," he says.

"In most cases the rigs were fairly standard. In all cases, they were compatible with our own procedures. We had one experience with a small Iranian destroyer escort that had to use what we call a 'close-in' rig. This is seldom used in the United States Navy. But it was still within our capabilities."

CAPT Felt views *Camden's* second deployment with *USS Enterprise* with equal enthusiasm.

"That," he says with emphasis, "was to be more of a wide-ranging operation throughout the entire Indian Ocean area, primarily for the purpose of exhibiting a United States presence, through the United States Navy, to the countries surrounding the Indian Ocean.

"To be able to put a task force in an area to protect our sea-lanes," says CAPT Felt, "to me reflects the primary mission of the Navy throughout the world."

Because of the Indian Ocean's vast expanse, *Camden's* commanding officer sees the Fast Combat Support



Facing page: Children flock to FN E. Lister (left), and PO1 I. Pressley, from USS Camden. Photo by JO3 R. Hollie. Below: A cement power pole, downed by tropical cyclone Gervaise, is set upright and its insulator connections wrapped. Photo by SN J. Scarborough. Bottom: Mauritian boy "hams" it up for photographer. Photo by MM2 G. Spaulding. Right: PO3 Joe Lumpkin works with local citizen in returning the island to normality. Photo by MM2 G. Spaulding.



Ship as "probably the best suited of our logistics ships for supporting an aircraft carrier and its task group in extended operations."

The Navy currently has three AOE's in addition to *Camden*. They are *USS Sacramento*, *Detroit* and *Seattle*.

As CAPT Felt puts it:

"First of all, the Fast Combat Support Ship has the speed and endurance that allow it to keep up with the rather fast-moving carrier task group.

"We also carry the fuel equivalent of the largest of our fleet oilers. We carry the ammunition equivalent, if it would be necessary, of our standard ammunition ship. And, we have the capability of carrying a great number of stores, fresh and frozen products, in order to sustain the task group in these remote areas."

As he continues ticking off the advantages of the AOE, CAPT Felt speaks of the two CH-46 helicopters which were assigned to *Camden* from Helicopter Combat Support Squadron Three at NAS North Island. He says they provide *Camden* with "a great deal of versatility and we used them to great advantage.

"That," he concludes, "was our job."

—JOC Warren Grass, USN



# Return From DIEGO GARCIA

"I'm coming home," croons Johnny Mathis on the early morning radio. The 0600 siren, exuberant crowing of the roosters and the whooshsh . . . and ahh . . . of waves arouse the Diego Garcia inhabitant from a comfortable slumber. After groping for sandals and razor, a refreshing walk in the clean, cool morning air and a cold shower awaken you.

These are some of the memories of the men of Naval Mobile Construction Battalion (NMCB) 10, who recently completed an eight-month deployment to the tiny Indian Ocean coral atoll.

Horseshoe-shaped Diego Garcia is 37 miles around from tip to tip. The land ranges in width from one and one-half miles to a mere slip of sand and coral between the ocean and lagoon. Dense vegetation and wispy coconut trees abound in its tropical climate where temperatures range from the mid-90s to a low of 70. It rains frequently, yet there is plenty of sunshine.

Discovered by Portuguese explorers in 1498, the island has now attracted much public attention because of its strategic position. In 1966 the United Kingdom and the United States agreed to use it as a military facility. In 1971 the first construction battalion arrived and began building the communication station and camp.

In spite of this new importance, Diego Garcia remains just a name in the minds of most Americans, but to







the U. S. Navymen stationed there it has taken on a specific and real meaning. Since their deployment there, the men of NMCB 10 have been given the opportunity to become experts on the trials and triumphs at one of the Navy's newest duty stations.

With NMCB 10's arrival, construction continued at a healthy rate on a variety of projects, including a gym, bowling alley, medical facility, chapel and library, water demineralization building, and tanks and pipelines at the petroleum, oil and lubricants site. These projects were complemented by road construction and landscaping. Living quarters at Camp C. S. Cummins were also built—tin-roofed, wooden huts, naturally cooled by ocean breezes.

Work took up most of the day on Diego Garcia, but recreation was also important. USO shows offered professional entertainment every three to four weeks. Several movies were shown nightly, and the library was well stocked. Basketball, softball, tennis, handball and even miniature golf were popular pastimes.

One sport even evolved into a game of its own—tackle volleyball. The jungle trails were used daily by a tribe of joggers. Water sports on this tropical island were also big, and "shelling" infected almost everyone.

The biggest lift to the collective spirit was provided by the biweekly supply plane which brought mail from home. That was followed closely by the mid-deployment R&R trip to Bangkok of which about half of the NMCB 10 men took advantage.

In addition to the work and recreation, most of the men took advantage of their isolation to improve their vocational skills, study college credit courses and read. Others worked on hobbies or physical fitness. All saved money—due largely to the absence of opportunity to spend.

It would be unrealistic to suggest that the men usually whistled while they worked or volunteered to extend their separation from families and home. But even the most staunch detractor of the visit to the distant waters of the Indian Ocean is compelled to admit that there were numerous benefits to be gained from the experience.

In years to come those who made the deployment will reminisce about sitting in the rain to see an outdoor movie; the pleasure of life in a climate where clothing is reducible to the barest minimum; the sight of a brave flock of chickens invading the camp; savory taste of a meal cooked over an outdoor fire; a whiff of fresh, unpolluted air; the eager anticipation of mail; and, of course, the ever-present frustration caused by the absence of the fairer sex. These are the ingredients of existence on Diego Garcia.

As the men of NMCB 10 boarded the plane for their long flight home, one thought filled their minds—"I'm coming home. Send someone to meet me, I'm coming home," the last words of the tune by Johnny Mathis.

—LT G. A. Blair





# OTSR Provides a 'Ship Weather Routing' *Favorable Winds &*

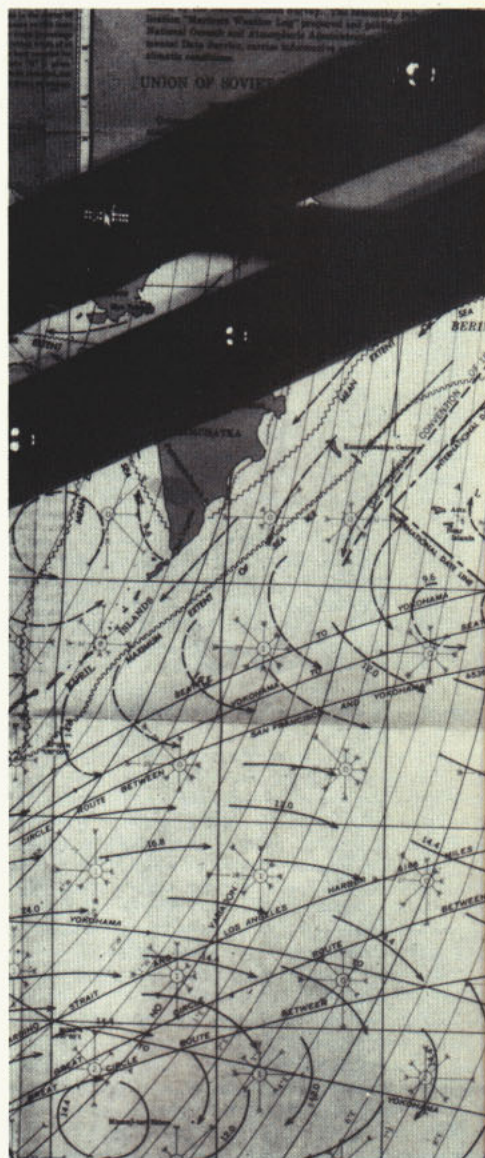
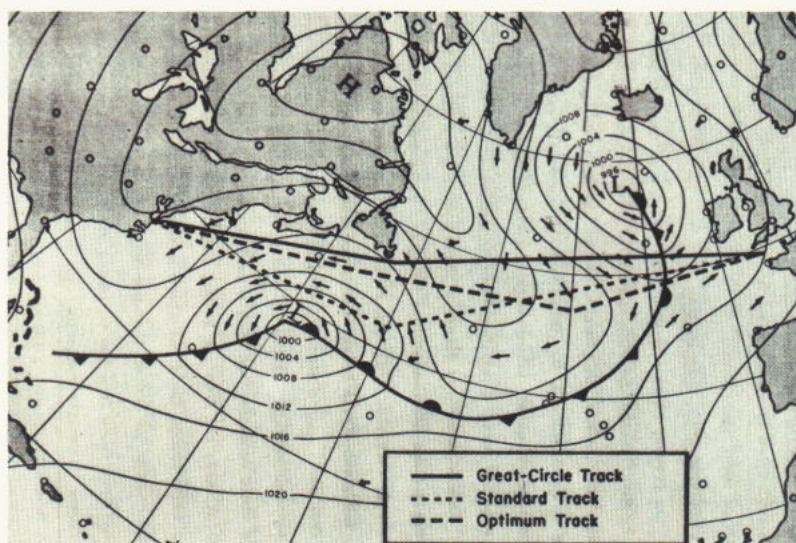
There are organizations within the Navy attempting to provide optimum sailing conditions for ocean voyages of fleet and government ships. These organizations of the U.S. Naval Weather Service Command are the Optimum Track Ship Routing (OTSR) offices at Fleet Weather Central Norfolk and Fleet Numerical Weather Central Monterey.

Norfolk provides routing in the Atlantic, while Monterey serves the Pacific and Indian oceans.

OTSR or ship routing is an attempt to provide a best weather—least cost route between the ship's departure port and destination. It is an advisory service which provides recommended routes upon request and makes recommendations for underway changes in route when wind and sea conditions make it necessary.

Although the Navy-sponsored routing service was begun in 1957, the concept of ships taking advantage of favorable wind, sea and ocean current has been around a long time. Most European explorers relied on easterly trade winds for crossing from Europe to the West Indies and prevailing westerlies when returning to Europe from Central and North America. In the Pacific, a similar situation occurred with Spanish galleons sailing in the northeast trades from Central America to the Philippines. These ships usually returned at a higher latitude in westerly winds to Central America and occasionally California.

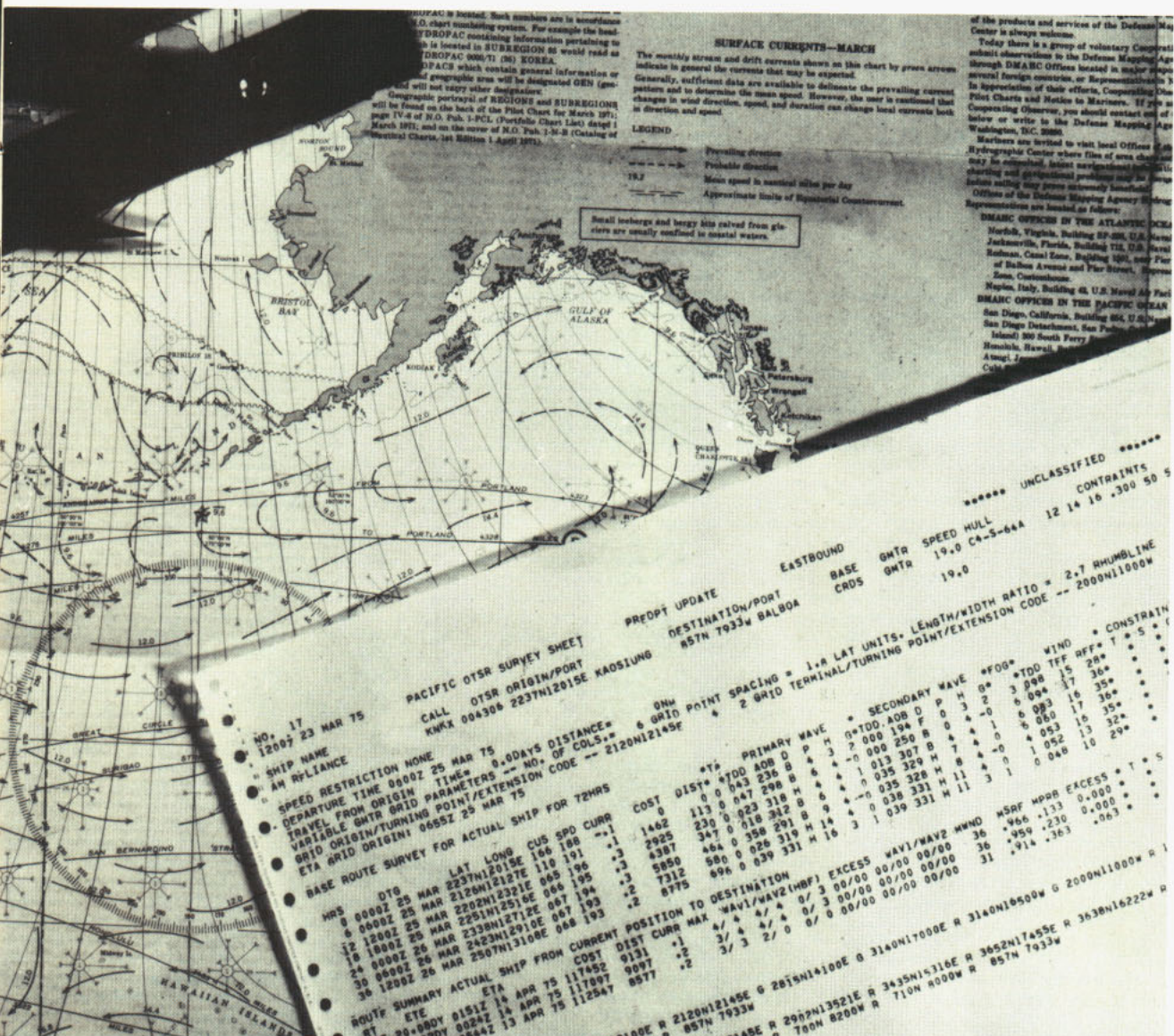
Benjamin Franklin, as postmaster-general of the Colonies in the 1770s, produced a chart of the Gulf Stream from information provided by New England whaling masters. This first mapping of the Gulf Stream helped Franklin improve the mail packet service between the Colonies and England. This was done by sailing east to England in the Gulf Stream and returning to the Colonies usually south of it. Thus the sailing time



Left: Computer surveys aid ship routing meteorologists in selecting the most efficient track for ships. Above: A computer printout of weather elements (wind, seas, fog, and ocean current) provides an instant reference for ship routing.



# Service Following Seas



for the voyage was reduced by as much as 14 days over routes previously sailed.

In the mid-19th century, Navy Lieutenant Matthew Fontaine Maury, called the Pathfinder of the Seas, compiled vast amounts of atmospheric and oceanographic data from ships log books into a series of publications called the Sailing Directions. For the first time ever, a climatology of ocean weather and currents of the world was available to the shipmaster. Information in the Sailing Directions was used to provide recommended routes for sailing ships and steam-powered

vessels in the latter part of that century. On one trade route alone, the average transit time from New York around the Horn to California was reduced from 183 days to 139 days with the aid of Maury's charts.

Present day ship weather routing uses modern weather forecasting techniques and procedures to improve on the climatologically based routes from the Sailing Directions. These procedures include application of computer methods to evaluate the effect that forecast environmental factors will have on ships. First, the computer aids the ship routing meteorologist in



## *Favorable Winds & Following Seas*



selecting the most favorable route for a planned deployment. In almost all cases, the route recommended to the ship is not the shortest distance between departure point and destination.

Second, once the route is issued, the computer uses the latest forecast to survey the ship's track twice daily to see if there is any change in the forecast which might necessitate a change in that track. By this procedure, the ship routing meteorologist attempts to maximize ship speed by avoiding or at least limiting the effect of adverse environmental factors.

If there is a significant change in weather along the ship's track, the ship router, aided by a computer-determined optimum track, will send a recommendation for track change to the ship. Usually a diversion is sent to avoid the winds and seas associated with a major weather system. Occasionally, a track change would also be recommended to take advantage of more favorable weather conditions on a shorter track.

Third, the computer provides a DR navigation plot of six hourly ship positions out to 72 hours along the ship's current track for all ships under OTSR. Included with the ship's navigation is a listing of expected speed for the next 72 hours, time and distance remaining, and the ETA (estimated time of arrival) at destination.

Benefits from the ship routing program at FLEWEACEN Norfolk and FLENUMWEACEN Monterey are basically safety and cost reduction. An effective ship routing service means minimizing the possibility of storm damage to ship and cargo, and avoiding injury to passengers and crew. Primary savings in operating costs include reduced damage, emergency shipyard repairs and fuel consumption. Savings are further increased by being able to set more accurate scheduling of cargo opera-





tions, RDVU/UNREP, underway training, normal shipyard maintenance periods and personnel planning.

While the objective for OTSR is to provide best weather—least cost routes, avoiding all unfavorable weather is difficult. The weather advisory (WEAX) is one of the support services available to ships and is a major function of the four FLEWEACENS of the Naval Weather Service, Norfolk, Rota, Guam and Pearl. WEAX is a twice-daily weather message which includes a short discussion of the synoptic weather pattern in the ships areas, a 24-hour forecast of weather, visibility, wind and seas along the ship's track, and a 48-hour outlook.

WEAX advisory complements OTSR in that it provides a short range forecast of en route weather conditions that will aid the CO in the day-to-day planning of underway operations, exercises and drills.

OTSR is available to all sizes of ships in the fleet. From CVANs, DLGs or ATFs, the service is tailored to meet each ship's capabilities and limitations. Consideration is given to each ship's speed, loading and operational commitments in providing the extended range forecasting service of initial route recommendations and underway diversions.

—William M. Clune

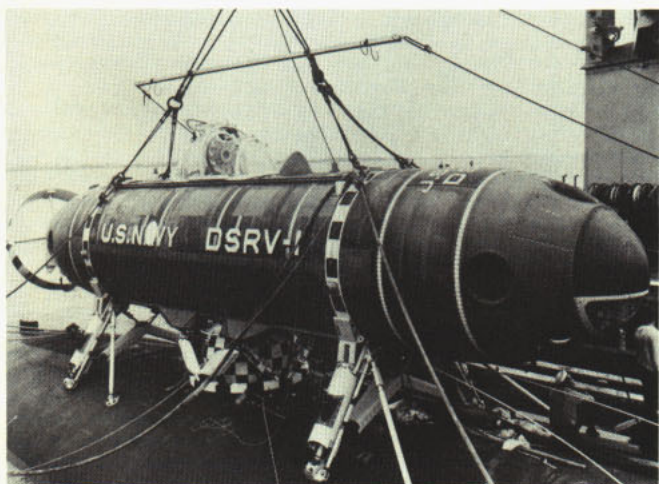
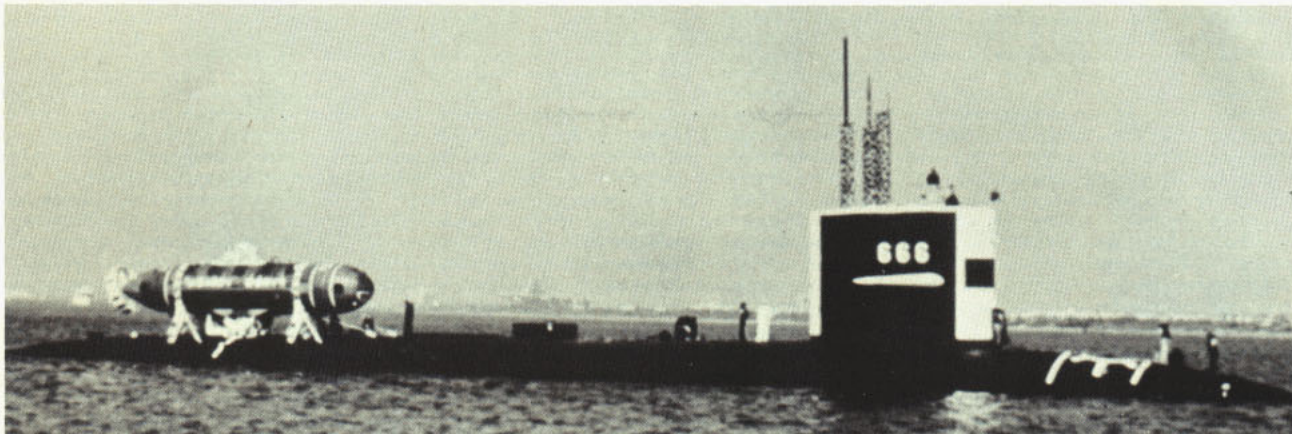




# A Tiny Fleet on the Frontiers of **INNER SPACE**







Since the beginning of time man has constantly endeavored to seek out and understand the unexplored regions of his environment.

The land masses of the earth present challenges to the curious and adventuresome mind. Man has always turned his eyes toward these new frontiers in hopes of better understanding the world and his own existence.

Advancements in technology have now enabled man to probe the vast frontiers of outer space. These same advancements have opened up another frontier—the frontier of inner space.

The world's oceans provide man with essential elements for life and they have provided the pathways by which man could travel to the new worlds. Now, the oceans also provide man with an exciting and unique challenge—the exploration of the ocean depths.

With the purchase of *Trieste* in 1957 from the Swiss inventor and physicist, Auguste Piccard, the Navy began to explore the area of deep submersibles. Since then a command has been formed to take charge of and coordinate all the deep submergence activities within the naval establishment.

Commander Submarine Development Group One, located in San Diego, Calif., was assigned the mission to possess and maintain a deep-ocean search, location, recovery, and rescue capability. Currently, Submarine Development Group One is made up of four general areas: submersible vehicles, support ships, diving and medical research.

### Submersibles/Support Ships

There are six submersible vehicles now attached to Submarine Development Group One—*Trieste II* (DSV 1), *Turtle* (DSV 3), *Sea Cliff* (DSV 4), DSRV-1 and DSRV-2, and *USS Dolphin* (AGSS 555).

*Trieste*, through the years, has aided in several scientific projects. Most significant was Project *Nekton*, in which the submersible conducted a series of deep dives which were climaxed by a 35,800-foot descent into the Challenger Deep. This voyage to the greatest known depth in the world's oceans has never since been duplicated by any manned vehicle.

The original concept of *Trieste* has undergone several modifications. *Trieste II* is now supported by *USS Point Loma* (AGDS 2).

*Sea Cliff* (DSV 4) and *Turtle* (DSV 3) are small, three-man submersibles, capable of operating at depths to 6500 feet where pressure exceeds 1.5 tons per square inch. This is the equivalent of saying that each one of the plexiglass viewports must withstand the weight of a large bus distributed over its surface. Perhaps even more graphic is the fact that the 1½-inch thick personnel sphere must withstand 30,000 tons of pressure.

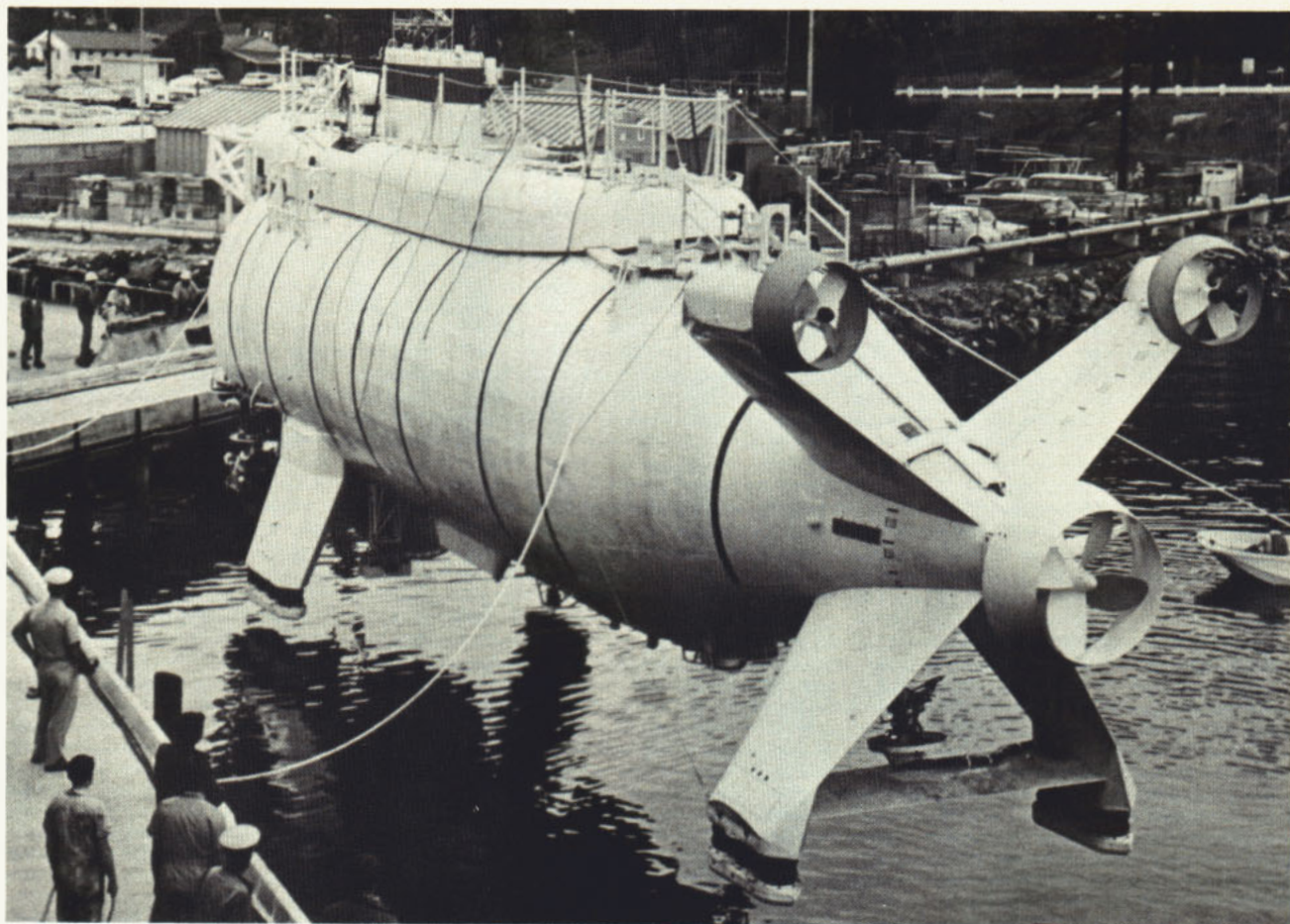
As units of Submarine Development Group One, *Turtle* and *Sea Cliff* have conducted operations for such organizations as the Pacific Missile Range, Office of Naval Research, Naval Research Laboratory and the Naval Civil Engineering Laboratory.

The Deep Submergence Rescue Vehicle (DSRV) is a bold new approach to the rescue of a crew from a disabled submarine. DSRV-1 and DSRV-2 are designed to mate with the disabled submarine and transfer up to 24 survivors per trip to either a surface support ship or a mother submarine.

Immediately after it is learned that a submarine is disabled, DSRV and support equipment are loaded

Left: DSRV being loaded aboard a C-141 aircraft. Top: DSRV aboard the "mother-submarine" USS Hawkbill. Above: DSRV-1.





aboard three C-141 aircraft and flown to the port nearest the disaster scene. The DSRV is then loaded aboard a "mother" submarine or a surface submarine rescue ship (ASR) and transported to the scene of the disaster.

When carried aboard a mother submarine, the DSRV rides "piggy back" on the after hatch to permit entrance into the vehicle while submerged. Once in the area of the distressed submarine, the DSRV is manned and launched. Once the DSRV locates the disabled submarine it is then mated to either the forward or after escape trunk hatch to transfer life support supplies to the submarine and take on the first load of rescuees. The DSRV then commences shuttling between the two submarines until all personnel have been rescued. All of this takes place while submerged, thus providing a system that is capable of being employed in all weather, during day or night or under ice.

At present, both DSRVs are "in service, special" while undergoing extensive technical and operational evaluations to determine their operating and handling characteristics. Upon completion of evaluation the DSRVs will be fully prepared to perform their rescue missions.

USS *Pigeon* (ASR 21) and USS *Ortolan* (ASR 22) are equipped with McCann Rescue Chambers and MK II deep-diving systems for saturation diving. *Pigeon* is attached to ComSubDevGruOne and *Ortolan* to COMSUBRON Six to support East Coast DSRV operations.

There is a second submarine rescue ship attached to Submarine Development Group One, USS *Florikan* (ASR 9). Her primary mission is the rescue of personnel from a stricken submarine by means of a rescue chamber. She has a secondary mission of the salvage of the submarine itself.

This ASR is equipped with a submarine rescue chamber, helium/oxygen diving equipment, standard air deep-sea diving equipment, scuba, and lightweight diving equipment. In addition, *Florikan* has two recompression chambers, installed for the treatment of bends, air embolism and other diver diseases.

### Saturation Diving

Also attached to the Group is the Navy Deep Diving System MK 2 MOD 0 (DDS MK 2/0).

Through the use of DDS MK 2/0 and the method of saturation diving, Submarine Development Group One established the world record for open sea saturation diving to 1010 feet on 28 Jun 1972. Saturation diving techniques involve exposing the body to an elevated pressure for 12 to 24 hours. During this time the body reaches a state of equilibrium with the atmosphere to which it is exposed and absorbs all of the gas that it can absorb at that pressure.

Advantage of saturation diving over normal diving is that the diver may live and work at this elevated



pressure for as long as is necessary to accomplish his task, be it three hours, three days, three weeks, or three months. Decompression time in each case is approximately 24 hours per 100 feet, regardless of how long the diver remains down.

The longer the diver can work, the more efficient the dive becomes; through the use of saturation diving techniques the diver can also reach greater depths.

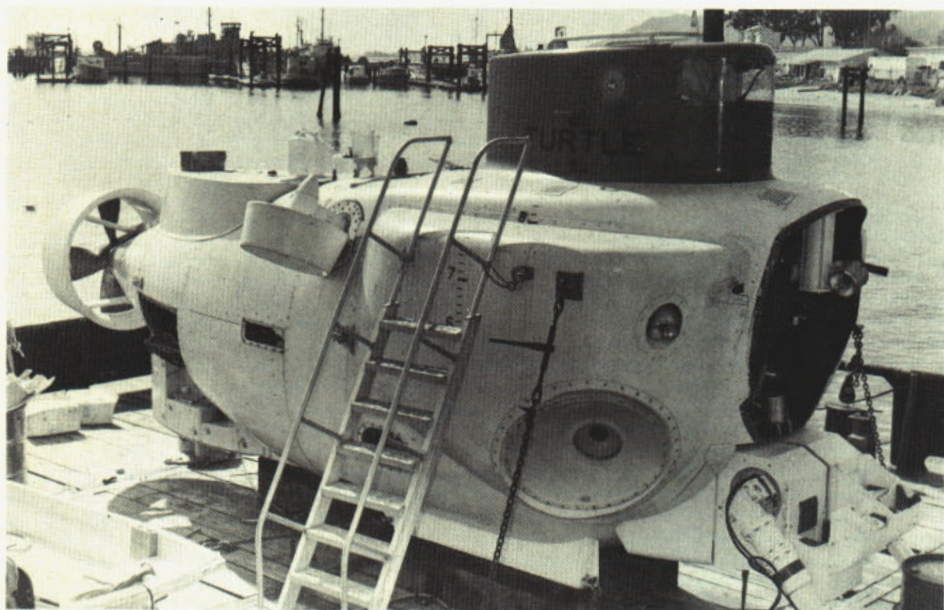
### Medical Research

As the submersible crews and the deep-ocean divers continue to advance in their undersea capabilities, they are also providing the medical world with valuable psychological data. The effects of increased atmospheric pressure, the breathing of various gas mixtures, and the unique psychological aspects of these deep-ocean encounters provide a great deal of valuable information.

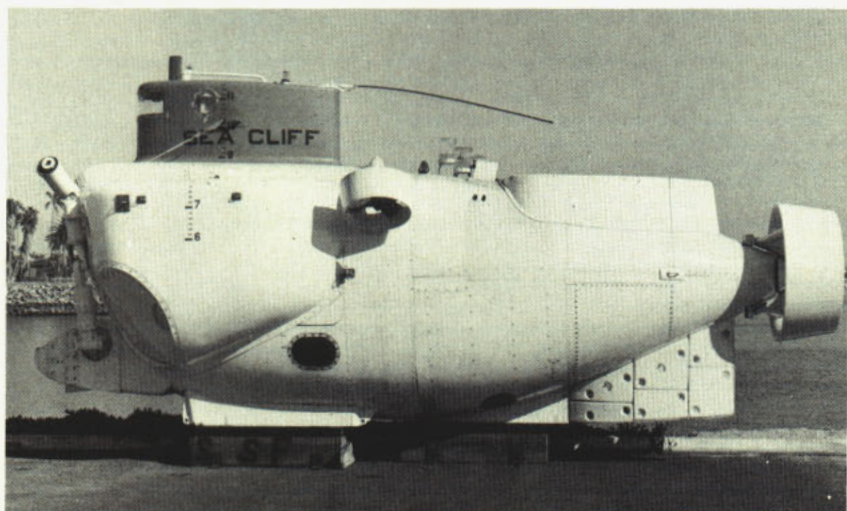
Physiological investigations consist of studies dealing with decompression, oxygen toxicity, pulmonary function, and underwater data acquisition. Behavioral investigations deal with nitrogen narcosis, stress physiology and personnel selection.

Man has begun probing the frontier of inner space. But before the ocean depths can be freely and easily explored, man must first overcome the hostile environmental effects of the oceans' elements. Submarine Development Group One, through the use of submersibles, new diving techniques and medical research is endeavoring to learn more about the oceans which cover such a large portion of our planet.

In the words of Sir Isaac Newton, "If instead of sending the observations of seamen to able mathematicians on land, the land should send able mathematicians to sea, it would signify much more to the improvement of navigation, and to the safety of men's lives in that element."



Facing page: Trieste II (DSV 1).  
Above: Turtle (DSV 3) aboard support ship Maxine D. Right: Sea Cliff (DSV 4).





# IT'S HERE .....



## A Basic Uniform For All

SEAMAN  
to  
ADMIRAL

It was four years ago this spring that the Navy announced plans for a new uniform, a basic uniform that would be the same for all members of the naval service—from seaman to admiral. The uniform change symbolized an important theme, traditional in the Navy, which has received greater emphasis in recent years: "One Navy, united in purpose, striving for common goals."

That same theme had been given voice almost two centuries ago, when the members of the crew aboard the continental frigate *Providence* made a request to their captain, in 1778, that a "proper Navy uniform be procured" so that "all may have an opportunity to appear alike as brothers united in one cause." They did get a unified uniform some time later, but early uniforms for other enlisted members continued to differ from that of the officers.

This month, as of 1 Jul 1975, the evolutionary change to a one-uniform Navy which was approved in June 1971, goes into effect on a Navywide basis.

The jumper style uniforms will no longer be worn except for those personnel whose enlistment expires prior to 1 Jul 1976 and for members of the Ceremonial Guard (headquartered in Washington) who will continue to wear the old uniform as historical attire. Gone also are Service Dress Khaki for officers and CPOs, plus Service Dress White and Full Dress White for CPOs and all enlisted women.

These changes were announced in conjunction with the introduction of the new enlisted uniform. Even though they resulted in a reduction of uniforms, there has been continued concern with the existing proliferation of uniforms. Aware of the many colors of uniforms, with varied shadings of each, the Navy zeroed



in on the two major problems: for the individual officer and sailor, the requirement to maintain such a wide variety of items meant that it was increasingly difficult to keep all in a proper state of good repair and appearance. For the Navy as a whole, the variety of uniforms had encouraged the appearance at any given location of different uniforms in a variation of shades and colors defying any attempt for "uniformity."

Thus, last fall, a well thought-out, long range program was begun to reduce the number of uniforms and accoutrements.

The Navy Uniform Board, under the direction of the Chief of Naval Personnel, began the review which included examining decisions made in the past and considering what should be done to provide adequate, functional uniforms for all hands.

Recommendations from the fleet were given full consideration and of course some of these recommendations urged reverting to the old enlisted uniform. That proposition was again thoroughly evaluated along with others, and it was determined that such a decision would have meant higher costs and two and one-half more years of uniform instability and transition.

The decision to change the Navy enlisted men's uniform to the distinctive and traditional double breasted coat and tie style uniform was made with the consideration that it is, in fact, timely and made with the best interest of the Navy and individual service member in mind. Although it was proposed to provide an issue of the new uniform to each active member, the level of defense funding precluded such action and was thus rejected by the Secretary of Defense. Therefore, those sailors who entered the Navy prior to 1 Jul 1973 (when issue of the new uniform began) and will remain on active duty after 1 Jul 1976 are requested to purchase the new uniform with funds paid to them in a monthly clothing maintenance allowance. All enlisted persons who have over six months' service receive \$5.70 per month (\$68.40 per annum) with which to maintain their present uniforms or buy replacement uniforms. Navy-men with over three years' service receive \$8.40 per month (\$100.80 annually). A complete new enlisted blue uniform consisting of coat and trousers, shirt, tie and cap purchased from the Navy Supply System through local Clothing and Small Stores costs less than \$50.00.

Re-affirmation of the Service Dress Blue uniform as the basic year-round uniform for officers and enlisted,



Facing page: Three officers and an enlisted Navyman, representative of the shift to one basic uniform for all, view the new uniform as modeled by the seaman on this page. Photo above by PH1 Rich Pendergast.



## THE NEW UNIFORMS



Above: Enlisted man adjusts tie on the new convertible short-sleeved shirt which will become available after present stock of white shirts is depleted. The rating badge shows up on the right sleeve because it is seen through a mirror. Above right: This familiar photo was taken when the new uniform was first announced four years ago. Left: The new summer blue uniform for enlisted personnel.

was made after careful consideration of all options. It was decided that in addition to reducing the numbers of existing uniforms and accoutrements that guidance should be given as to how and where remaining uniform combinations should be worn in order to reinforce the desire to attain uniformity of appearance of naval personnel.

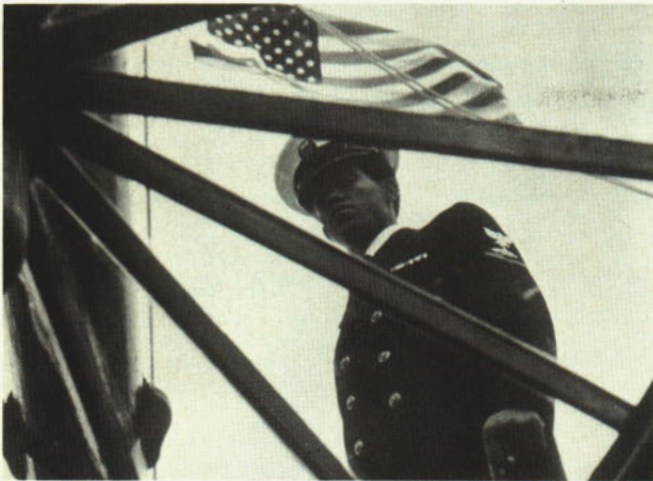
NAVOP 56 therefore becomes the first step in establishing a stable long-range uniform plan intended to provide functional, practical, sharp-looking uniforms for Navy personnel. The NAVOP announced in the May 1975 issue of *ALL HANDS* moves toward attaining

flexible combinations stemming from the basic Service Dress Blue uniform while requiring personnel to own and maintain a minimum number of separate uniform articles. The main points of NAVOP 56 are repeated below. Briefly—

- The basic all-year-round uniform for officers and enlisted is service dress blue.
- Uniforms will be prescribed by district commanders and area commanders to achieve both uniformity in specific locations and elimination of confusion for transient personnel. The NavOp will thus have the







effect of reducing the optional wearing of uniforms and the resultant lack of uniformity of appearance.

• Another important change, both from the standpoint of flexibility and cost, both to the individual and the Navy, is the introduction of the convertible collar, short-sleeved shirt in about 18 months. It can be worn with collar open or with a tie. It will become standard issue for the seabag, replacing current issue of white shirts when the stockpile of these shirts is exhausted. New recruits joining the service will then receive five of these shirts that can be worn with both winter and summer uniforms. The cost of owning a long-sleeved shirt, while still optional for wear with the service dress blues, will thus be eliminated.

The service dress blue uniform also has the advantage of both uniformity and flexibility. Worn year-round, it comes in both winter weight and summer weight fabrics. Enlisted personnel at recruit training centers are issued one of each weight.

On these pages are shown illustrative samples of the enlisted and officer uniforms and changes that are here or on the way. These are the main changes:

**WINTER WORKING BLUE.** It utilizes the trousers of the service dress blue uniform, along with a long-sleeved blue shirt, black belt, shoes, socks and combination cap. It is now available in several fabrics through exchange uniform shops. Issue of a wool flannel shirt

**Top left:** The Dress Blue Uniform, worn with pride by all, from seaman to admiral. **Left:** The Tropical White Long Uniform and the Winter Working Blue Uniform. The side-creased white trousers may continue to be worn by those with EAOS prior to 1 Jul 1976. **Below:** The vest of the Service Dress Blue Uniform with silver buttons may be worn by enlisted, and with gold buttons by officers. **Below right:** Models of the Winter Working Blue, the Officers' Lightweight Raincoat and the Service Dress Blue coat. The raincoat is now authorized for officers and CPOs only.





## THE NEW UNIFORMS

will commence for recruits during this fiscal year. It is:

Required for all enlisted men and officers by 1 Jul 1976.

Worn with tie. May be worn without tie (open collar) when prescribed for industrial safety considerations, and when aboard ship.

May be worn with blue working jacket (only aboard duty station), or with pea coat, reefer or raincoat.

Worn with breast insignia/badges, but *not* ribbons.

Cannot be worn with service blue coat.

May be worn to and from work (with some restrictions) in home port or permanent duty station.

### ENLISTED SUMMER UNIFORMS

● **Tropical White Long** will continue to be worn where specified by district commandants by enlisted personnel as a uniform of the day in areas where climate clearly dictates, or on ceremonial occasions. The new convertible collar, short-sleeved shirt (soon to be available) may be worn with this uniform.



Above: Three sailors appear in three working uniforms: Dungarees, Blue Working Uniform with modified buttoned-down-front shirt, and Lightweight Blue Coverall. Left: Three more sailors model the new dungarees, worn with the blue ball cap.



## KHAKIS AND AVIATION GREENS

- Tropical Khaki Long has been deleted as a dress uniform. The uniform has been redesignated **Working Khaki** and consists of a short-sleeved khaki shirt, khaki trousers and belt, combination cap or fore and aft cap. The trousers may be of worsted, double-knit, wash-and-wear fabrics, and washable cotton that meets acceptable standards of neatness. It may be worn with the optional khaki jacket, but not the blue working jacket. It will be worn with breast insignia/badges, but *not* ribbons. It may be worn to and from work.

- The long-sleeved khaki shirt will be an authorized uniform item only when worn with the optional **Aviation Green** uniform after 1 Jul 1975.

- Brown shoes will be deleted as an authorized uniform item, effective 1 Jul 1976. Black shoes and socks may now be prescribed for wear with khaki uniforms and the optional Aviation Green uniform.



Left above: The Blue Working Uniform with modified shirt. Above: Lightweight Blue Coveralls authorized for wear in surface ships and submarines. Right: The reefer (pea coat) may be worn with either Service Dress Blue or Winter Working Blue Uniforms.

- **Summer Blue.** This is a new uniform approved for enlisted personnel, and may eventually replace the Tropical White Long. It consists of the tropical white shirt or convertible shirt, ribbons and breast insignia, combination cap, service dress blue trousers, black belt, shoes and socks. It will be worn with rating badges for E-1 to E-6, and collar devices for E-7 to E-9. It will be especially useful when working conditions preclude the wearing of white trousers. One of the advantages of this uniform when the convertible shirt becomes available is an easy conversion to service dress blue for more formal wear by the addition of a tie and coat.

## OFFICER SUMMER UNIFORMS

- **Full Dress White** will be retained as a uniform for all officers.

- **Tropical White Long** will also be retained. Under consideration are plans to augment this with the officer's equivalent of the Summer Blue uniform (above).





## THE NEW UNIFORMS



Above: Summer Blue is a new uniform authorized for enlisted women. Center top: The beret for optional wear with women's uniform. Note new insignia. Center: The combination cap with the old cap insignia may still be worn by those who entered the Navy before 1 Jul 1975. Far right: Slacks may be worn with Service Dress Blue or Summer Blue Uniforms. Below right: The new Service Dress Blue Uniform with optional beret.

### OTHER WORKING UNIFORMS

- **Dungarees.** A flare-legged dungaree trouser and chambray shirt uniform will be introduced in the near future. It is similar to those presently optional "dungarees" sold through the Navy exchanges. It is planned to replace the current blue working uniform and will be phased in as stocks of that uniform are depleted.

- **Blue Working Uniform.** While awaiting introduction of the new Dungaree uniform, the shirt of the present work uniform has been modified to have an open, button-down front, and will be worn inside the trousers. This modified uniform is now being issued to new recruits.

- **Coverall.** A new lightweight blue coverall is approved as organizational issue for surface ships. It will also replace the present *Polaris* submarine type coverall and should be available by 1 Jul 1976.







The women's Light Blue Uniform and the men's Tropical White Long Uniform.

## WOMEN'S UNIFORMS

A review of the current uniforms authorized for women officers and enlisted women has been conducted. Several changes have been proposed, but a final decision has not been made on all the proposals. Here are some of the changes that have been approved.

- **Service Dress Blue.** Effective this month, Navywomen at recruit training centers are being issued service dress blue uniforms made of the same type fabrics and black shade as that of men. The anchor and propeller emblem on the collar of the enlisted woman recruit's uniform has been removed, and the coat has pewter buttons (like those on the enlisted man's coat) rather than the gold buttons. Enlisted women will also change to the same cap device as men. The design of women's uniforms, whether officer or enlisted, will be alike. The types of fabric authorized include polyester blends, gabardine, double knits, and tropical worsted.

While the enlisted woman's uniform, as indicated above, is mandatory for all new recruits entering the service after 1 Jul 1975, those already in service prior to that date have an optional period of two years before completing the changeover. The revised woman's uniform becomes mandatory on 1 Jul 1977, except for those whose enlistment expires prior to 1 Jul 1978.

- **Service Dress Slacks.** Currently optional for enlisted women and women officers is a pants suit consisting of flared slacks, worn with the service dress coat and existing white blouse with tie.

- **Summer Blue.** This is a new uniform authorized for enlisted women to be worn when prescribed by district commandants. It consists of the white blouse and tie worn with either service dress skirt or the flared slacks. Either the combination cap or the newly authorized optional beret may be worn with this uniform.

- **Beret.** An optional feature of the woman's uniform (officer and enlisted) is the beret, shown on these pages, worn with the same insignia as that on the combination cap.

Several additional changes are under consideration, including a new four-piece interchangeable ensemble as replacement for the light blue summer uniform. Results of this review will be published in ALL HANDS when approved.

## MEN'S UNIFORMS

<b>Basic</b>	<b>Officer</b> Service Dress Blue	<b>CPO</b> Service Dress Blue	<b>Enlisted (E-1 - E-6)</b> Service Dress Blue
<b>Summer &amp; Tropical</b>	Tropical White Long	Tropical White Long Summer Blue	Tropical White Long Summer Blue
<b>Summer Ceremonial</b>	Full Dress White	Tropical White Long	Tropical White Long
<b>Work</b>	Winter Working Blue Working Khaki Aviation Green Coverall	Winter Working Blue Working Khaki Aviation Green Coverall	Winter Working Blue Dungaree or Blue Working Uniform Coverall



## from the desk of the **Master Chief Petty Officer of the Navy**

### **'Uniformly Speaking'**

Because every member of our Navy is a representative of the American public, his or her dress, grooming, and conduct should always reflect credit upon both the Navy and our country. Moreover, wearing our Navy's uniform should be a matter of personal pride to all naval personnel.

Since the American public would not favorably support a Navy whose members were unkempt or lax in personal hygiene, and because the Navy's Uniform Board is primarily concerned with standards of grooming and dress, I consider my position as a voting member of the Navy Uniform Board a prime responsibility.

I think it is important that you know you are personally represented on the board. The board consists of approximately 15 members representing all segments of the naval community from seaman to admiral, both female and male. Each member of the board is charged with providing input from the members he or she represents. Under the direction of the Chief of Naval Personnel, the board meets frequently to discuss changes in uniform and grooming regulations.

Additionally, two naval officers work on a full-time basis to deal with uniform and grooming standards. Commander F. T. Leroy is the Assistant to the Chief of Naval Personnel for Uniform Matters, and Lieutenant J. C. Conway (SC) is the Recorder

for the Navy Uniform Board. CDR Leroy, LT Conway and their staff work many long hours gathering input, preparing briefings, answering inquiries, and disseminating information on uniform and grooming regulations.

MCPON John D. Whittet. Photo by G. D. Hughes.



# SEABEES IN BERMUDA

The Seabees of Naval Mobile Construction Battalion 71 completed the overlay of the main runway at the Naval Air Station Bermuda early this spring. Favorable weather since the 17 February start, combined with the expertise and efficiency of the personnel involved, enabled timely completion of this significant construction effort.

The event culminated many hard months of planning and preparatory work involving special training of personnel, material and equipment selection, staging and shipments, erection of asphalt plants and the paving of numerous Naval Air Station roads, taxiways and aircraft parking aprons. The logistics of this operation was a major undertaking in itself, as all materials used had to be shipped into Bermuda under critically demanding time frames.

The new runway surface, approximately two and one-eighth inches thick and extending over the entire 7622 feet of existing asphalt surface, involved placement

of some 15,500 tons of asphaltic concrete. The runway paving was more challenging than most asphalt jobs because the Seabees had to work at night to avoid conflict with daytime aircraft movements. To combat the problems caused by the darkness, the Seabees designed and built special trailer-mounted lighting units to illuminate the runway. The lighting, training, planning and just plain hard work enabled the men to pave about 500 lineal feet of runway per night.

The completion of the runway overlay was the major asphalt milestone for the battalion but it still has to complete construction of shoulders along the entire runway, overlay additional taxiways and parking aprons, and repaint runway pavement markings.

When the Seabees of NMCB-71 leave Bermuda in the near future to return to Gulfport, Miss., they will look back on the Bermuda deployment with the satisfaction of knowing they've completed a demanding construction job on time and with quality workmanship.



As a result of all these efforts, the Navy Uniform Board ultimately forwards to the Chief of Naval Operations (CNO) recommendations on uniforms and grooming regulations which represent the views of all levels of the Navy. Consequently, the CNO may confidently promulgate uniform and grooming standards which reflect months of research, planning and discussion.

The decisions promulgated by our CNO or any CNO on uniform changes are not taken lightly and are made to promote Navywide overall morale and retention and to be responsive to your desires.

A decision to change the Navy's bell-bottomed, jumper-style dress uniforms to a distinctive and equally traditional officer-style, coat-and-tie dress uniform was made in 1971. The decision was made as a result of many years of experimentation, personnel surveys and retention studies, and reflected the Navy's desire to have a uniform which was more appropriate to the times and suited for the sophisticated, technically oriented sailor of today.

Surveys revealed that 81 per cent of the enlisted men preferred a coat-and-tie style uniform over the jumper and bell-bottoms. Since 92 per cent of the officers and chiefs interviewed had a good opinion of their dress blues, the logical move was to go to that style of uniform for all Navymen, from seaman to admiral.

The concept of one basic uniform is consistent with the Navy's ideal of "One Navy, United in Purpose, Striving for Common Goals." Changes announced in NavOp 56 are further directed toward building more flexible combinations from that one basic uniform, the Service Dress Blue.

Letters and telephone calls to my office have indicated that some members mourn the passing of the Tropical Khaki Long uniform. The decision to use khakis only as a work uniform was in line with the CNO's desire that we ultimately provide functional and attractive uniforms with a nautical ap-

pearance for all naval personnel.

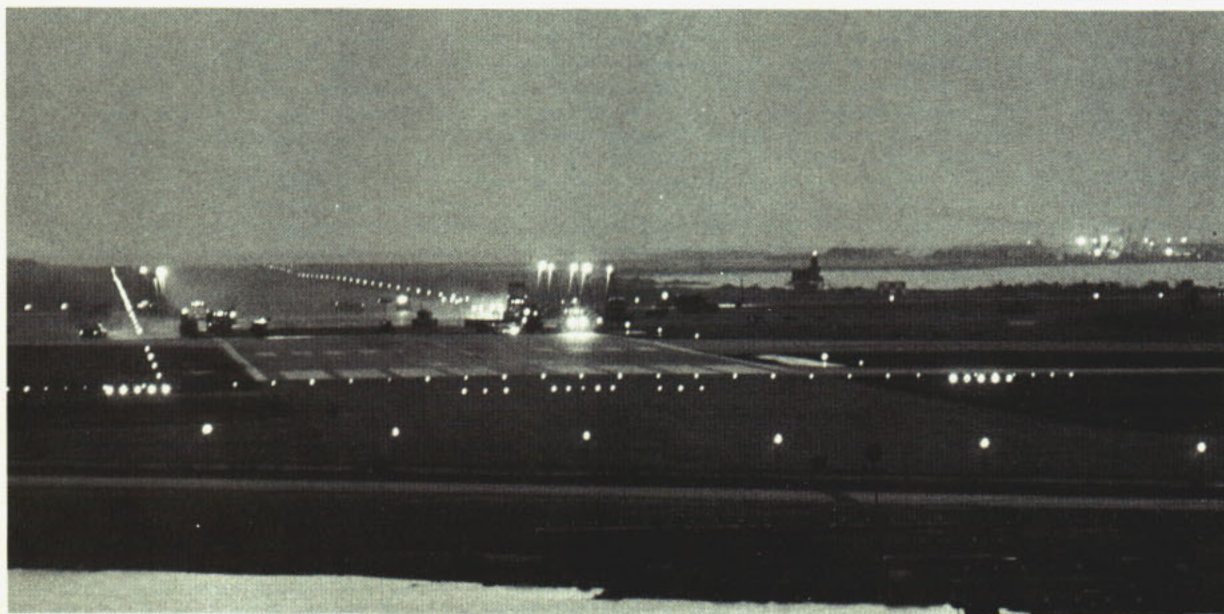
I recognize that Tropical Khaki Long has enjoyed widespread popularity. However, at the same time it has also been considered less than attractive on some occasions due to the proliferation of colors and nonmatching combinations of hats, trousers, and shirts, as well as several shades of shoes. On the other hand, Working Khaki provides a thoroughly functional and easily cared-for uniform for both work and local commuting.

While NavOp 56 is certainly not the total answer to all uniform problems, the Navy Uniform Board will continue to review dress and grooming requirements and recommend changes to the CNO. The ultimate goal will be to reduce superfluous items and attain uniformity while providing a distinctive and practical uniform for Navymen and Navywomen.

To accomplish this goal, the Navy Uniform Board will continue to survey the fleet. Your opinion is important. Yet, surveys are only one method of gathering background information for final decisions. Opinions generally vary with the number of people being surveyed. Cost effectiveness, availability of material, and durability must also be considered when selecting uniforms for Navy members.

At this time, the Navy Uniform Board is undertaking a major review of uniforms for Navywomen and grooming standards for all personnel. When all is said and done, you may be assured that all Navy personnel will be provided with uniforms and grooming standards which reflect traditional and contemporary societal norms, as well as Navy standards.

As I indicated previously, our proud American heritage commands a neat, uniform appearance from all hands. At home or abroad, each of us can make a positive contribution to the trim and tidy appearance that the Navy and the public have a right to expect. Uniformly speaking, it's not only what you wear, but how you wear it!





- ENLISTED AND OFFICER PROMOTION FREEZE LIFTED: SELECTEE BACKLOG CLEARED

In case you haven't heard yet, the advancement and promotion freeze imposed last February has been lifted. According to BuPers, funds are now available to resume normal promotions.

All officer promotion lists were scheduled to be cleared by 1 July. The majority of pending enlisted E-4 through E-9 advancements were also slated to be made by mid-July. More information on the lifting of the freeze is contained in NavOp 73 of 28 May 1975.

- NAVY SELECTS TOP THREE SAILORS FOR FY 75

Winners of the FY 75 CNO Sailor of the Year Awards were recently announced. They are: Pacific Fleet, SK1 (SS) Robin E. Marsh, USS Grayback (LPSS 574); Atlantic Fleet, ADJ1 John T. Litzinger, Helicopter Antisubmarine Squadron (Light) 34; and Shore, BM1 Frank J. Czajkowski, NTC San Diego.

These petty officers are scheduled to visit Washington this month to receive Secretary of the Navy's and CNO's congratulations along with meritorious promotions. They and their wives will then enjoy five days of R&R at a location of their choice in CONUS.

- AVIONICS RATINGS PICKED FOR NEOCS PILOT PROGRAM

The avionics portion of the aviation maintenance occupational field has been selected for study in a NEOCS pilot program. As a result, a complete updating of occupational standards will be made for aviation electrician's mates, aviation electronics technicians, aviation fire control technicians and aviation antisubmarine warfare technicians. During the coming year, representatives of the Deputy CNO (Air Warfare), ChNavPers and CNET will review the skill requirements within the avionics occupational field, identify appropriate skill levels and the training to support them, and explore common skill areas among the avionics ratings. BuPers reports that this effort is intended to refine all avionics technical training, classification and use of personnel, and to modify some of the detailing procedures to accommodate the changed standards.

- ALL BASIC ELECTRONIC WARFARE TRAINING PUT UNDER ONE ROOF

The Navy's basic electronic warfare (EW) training (airborne, surface, and subsurface) has been centralized in the new consolidated Navy Electronic Warfare School which opened at Pensacola. The school, located at the Naval Technical Training Center, Corry Station, is a major component of the Electronic Warfare Training System. Students will receive instruction in all phases of airborne, surface and subsurface operations and maintenance in the EW field. The school is expected to build up to an annual input of about 2400 students over the next five years, and will eventually employ approximately 175 instructors. Ninety-one students are enrolled in the school's first class.

- MCPON SELECTION NARROWED TO FOUR CANDIDATES

The field of competitors seeking the Master Chief Petty Officer of the Navy post has been narrowed to four men. They are: UTCM Robert L. Evans stationed at the Bureau of Naval Personnel; NCCM Charles H. Griva of Commander Naval Surface Force, Pacific; PNCM Joe D. Pierce of Chief of Naval Air Training,



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Corpus Christi; and OSCM Robert J. Walker of Commander Naval Air Force, U. S. Atlantic Fleet. Final selection is expected to be made soon.

- RESERVE MCPOF NAMED TO SUCCEED AFCM JOHNSON

Master Chief Yeoman Joseph Lalley was recently chosen to be the next Master Chief Petty Officer of the Naval Reserve Force. He is scheduled to relieve current Reserve MCPOF, AFCM Richard P. Johnson, in New Orleans this August. YNCM Lalley is now serving as administrative officer and MCPOC of the Naval Air Reserve Unit, Norfolk, Va.

- NESEP NOT YET READY TO RECEIVE APPLICATIONS

Applications for the 1976 NESEP Program are not now being taken, as was reported in the May 1975 Navy News Briefs. According to BuPers Notice 1530 of 19 May 1975, "Each applicant shall complete and submit not earlier than 1 October a NESEP application, NAVCRUIT 1110/122 (2-73), via his commanding officer to reach the Chief of Naval Personnel (Pers-483) not later than 1 November." BuPers officials said that any application received before 1 October will be returned to the command for resubmission within the designated time period.

- RETIRED PAY INVERSION WORKSHEETS AVAILABLE

"Retired pay inversion" is a complex issue of growing concern to all Navy personnel contemplating retirement. The situation may again be encountered on 1 Oct 1975. In an effort to help retirement-eligible personnel reach a knowledgeable decision before October, a memorandum has recently been sent from the Chief of Naval Personnel to all commanders to explain the problem and discuss the alternatives. Involved in retirement pay inversion is the question: "Will I receive a greater amount of retired pay by retiring before 1 Oct 1975 or by continuing on active duty and retiring at a later date?" The answer to this question depends upon whether there is another Consumer Price Index (CPI) adjustment to retired pay prior to the next anticipated active duty pay raise in October 1975. It is emphasized that the complexities involved require that each member's case be considered on an individual basis because many members clearly stand to earn increased retirement benefits by continued service. Included in the memo are worksheets with which an individual can compute retired pay before and after the next active duty pay raise with no further CPI adjustment, and with an additional five per cent CPI adjustment. Worksheets will be made available by local commands to each individual considering retirement.

- TWO NAVYMEN NAMED WHITE HOUSE FELLOWS BY THE PRESIDENT

Lieutenants Dennis C. Blair and Randall W. Hardy are among the 14 men and women recently named by President Ford to be White House Fellows for FY 76. LT Blair is currently serving with the CNO Systems Analysis Division; LT Hardy as CNO Assistant NATO Plans officer. This marks the first time Navy has had two Fellows selected in the same year and brings the total to five Navymen chosen for the honor since the program began in 1964. The White House Fellow Program offers young Americans firsthand experience in the process of American Government by allowing them to work on the staffs of the President, Vice President, members of the President's Cabinet or heads of government agencies.



- REFUGEE SPONSORSHIP POSSIBLE THROUGH PRESIDENT'S TASK FORCE

Navy people wishing to sponsor Indochina refugees may do so by working through the interagency Indochina Task Force, established by the President in April. The task force includes representatives from the U. S. Departments of State, Defense, Justice, HEW and Labor. It is designed to assign sponsors to refugee families and to aid them in their effort to help a refugee family become self-supporting in the shortest period of time. Sponsors assist refugee families to find jobs, locate schools for their children and acquaint them with American customs and laws.

Individuals can initiate action for assignment as sponsors by contacting the task force at its toll-free number (800) 368-1180 or, from within the Washington, D. C., area, at 632-9800, and supplying the following information: whether it is an individual or group sponsorship; the assistance offered, that is, financial aid, shelter, jobs; duration of sponsorship; name, if a specific family is to be sponsored; and the size of the family that the sponsor can accommodate. Sponsors will be personally interviewed by representatives of one of nine national volunteer organizations assisting in the program. Once accepted, the sponsor will be contacted by the volunteer organization to make further arrangements.

In addition, a USN/Indochina Navy clearing office has been created in the Pentagon to aid former members of the Cambodian or South Vietnamese Navy. It will operate through August 1975. This office can be contacted during normal working hours by phone at autovon 227-5406 and 225-3094/3096/3099, or at commercial (202) 697-5406 or 695-3094/3096/3099/.

- A CHALLENGING OPPORTUNITY: BE A NAVY RECRUITER

Volunteers are urgently needed in the challenging field of Navy recruiting. Immediate positions for men and women are open in the following Navy Recruiting Districts (Some typical station locations are also shown): New York, N. Y. (Jamaica, N. Y.; Bayshore, L. I.); Newark, N. J. (Asbury Park, New Brunswick); Philadelphia, Pa. (Atlantic City, Toms River, N. J.; Chester, Pottstown, Pa.); Detroit, Mich. (Holland, Grand Rapids); Washington, D. C. (Fairfax, Va.; Rockville, Hagerstown, Md.; Newark, Del.). Specific station vacancies vary in each district.

Minority volunteers are urged to apply immediately for these locations or any other recruiting district of their choice. Minority recruiters representing all ethnic groups are needed in most states now, with many additional billets scheduled to open in October and November.

All personnel applying for recruiting duty must qualify in accordance with Chapter 11, Enlisted Transfer Manual (NavPers 15909B). Send applications to the Chief of Naval Personnel (Pers-5021).

- AEGIS AND HARPOON MISSILES COMPLETE SUCCESSFUL TEST FIRING

Test firing of the Aegis missile system and the Harpoon missile was recently completed at the Pacific Missile Range.

Aegis scored its 10th hit in 10 firings against a variety of air targets, intercepting subsonic and supersonic targets at both high and low altitudes. Designed as the Fleet's future anti-air defense system, Aegis is capable



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of automatically detecting, tracking and intercepting hostile missiles and aircraft. The system requires only one human action--closing the firing key.

In another significant test, two Harpoon missiles were fired for the first time from a large surface combatant, USS Sterett (CG 31), destroyed a drone patrol boat at over-the-horizon range and hit a destroyer hulk. Both hits were made under difficult weather conditions. Harpoon now has a score of 25 successful firings in 28 tries. The missile is being developed as an all-weather, antiship weapon which can be launched from aircraft, surface ships and submarines.

## ● NAVY'S TOP CANDIDATES FOR NEY AWARD ENTER FINAL ROUND

Finalists in this year's Ney Award Program were recently visited to determine the winners for the 18th annual awards. One winner from each of four categories will be chosen by representatives of the Navy Food Service Systems Office, the Bureau of Medicine and Surgery and the Food Service Executives Association. Finalists in each category are:

- Large afloat--USS Ajax (AR 6), USS Canopus (AS 34), USS Constellation (CVA 64) and USS Prairie (AD 15).
- Medium afloat--USS Concord (AFS 5), USS Dale (CG 19), USS Shasta (AE 33) and USS Towers (DDG 9).
- Small afloat--USS Cree (ATF 84), USS Illusive (MSO 448), USS Pargo (SSN 680) and USS Welch (PG 93).
- Ashore--NavSta Argentia, New Foundland; NAS Guantanamo Bay, Cuba; NTTC Corry Station, Pensacola, Fla.; and NAS Whidbey Island, Oak Harbor, Wash.

## ● COMTWELVE PLANS TO OPEN NAVY BICENTENNIAL MUSEUM

A Navy and Marine Corps museum is scheduled to open at the Twelfth Naval District Headquarters Building, Treasure Island, San Francisco, Calif., as part of the ComTwelve Navy Bicentennial celebration. Dedicated to the past, present and future role of the Navy and Marine Corps in the Pacific, the museum will display ship models, photographs, documents, military uniforms and other historical items in the rotunda of Building One. Museum doors are scheduled to open to the public on 1 Oct 1975 and remain open through 1976. There is a possibility that it may become permanent.

## ● NAVY WINS AND PLACES IN INTERSERVICE ALL-EVENTS BOWLING CHAMPIONSHIPS

The Navy women's bowling team captured the 1975 interservice all-events women's bowling championship at Dayton, Ohio, beating Army women bowlers by more than 430 pins. The men's team finished second in all-events men's competition, falling short of the Marines by just 143 pins. The three-day tournament featured men and women bowlers from Navy, Marine Corps and Army included competition in team, doubles and singles events.

In other events, Navy won both men's and women's team competition, led in individual pins for men's and women's teams and placed first and second in women's doubles. YN1 Dottie Morgan, ADCOM, NTC San Diego, won the interservice women's all-events championship for the second time by totaling 3218 pins in 18 games. AWC Richard Nicholson, HS-1, NAS Jacksonville, Fla., placed third in the men's all-events with 3506 pins.



## on the Educational Front

# PACE Graduation Aboard Midway

Eight USS *Midway* (CVA 41) sailors were recent participants in a very unusual graduation—the first graduation ever held aboard a U. S. naval vessel.

The eight men received associate of arts degrees from Chapman College, Orange, Calif., which provides on-board instructors under the Navy's Program for Afloat College Education (PACE).

Since PACE began on *Midway*, the program has grown from 68 to 230 students currently enrolled in 18 courses.

The carrier's curriculum has to be flexible to permit students and faculty to meet the ship's operational commitments and participate in shipboard drills. It's not unusual, for example, for an entire class to "disappear" in order to take part in a general quarters drill.

From the standpoint of class attendance and enthusiasm, PACE has been successful. One of the graduates, AQ1 Michael Johnson, said, "It is much more enjoyable to study through PACE than by correspondence course. The classes are scheduled and you get more out of personal contact with the professors."

The other men participating in *Midway's* recent graduation ceremony included HM3 Michael W. Barron, LT Robert N. Caton, DSCS Douglas L. Hawkinson, CWO2 Russell D. Hulsing, AE1 Steven C. Jones, RM1 Daniel Moran and PN2 Charles E. Netz. Three other sailors who received associate of arts degrees, but were unable to attend the ceremony, included YNC Denzil R. Roberts, PN1 Duane A. Schlismann and PCC John G. Delvin.



## A Degree for CWO REED

"I think PACE (the Program for Afloat College Education) is one of the best people-oriented programs the Navy has adopted for the fleet sailor. It allows the seagoing sailor to work on his education while seeing the world and learning a skill. Increased education makes the fleet sailor more mature, more effective and more adaptable to the increased complexity of modern military service."

Those were the words of Chief Warrant Officer Raymond L. Reed of USS *Kitty Hawk* (CV 63) when he recently became one of the first Navymen to earn his bachelor's degree under PACE.

This program offers men aboard naval vessels a chance to begin or augment their college education. Aboard *Kitty Hawk*, 564 sailors took advantage of PACE

last year. The program is administered by San Diego's Chapman College through the Educational Services Office aboard the carrier.

*Kitty Hawk's* program offers a choice of 23 different courses in six major areas of study: English, math, sociology, psychology, business and economics. It costs the students about \$15 to register, with an additional cost for books.

CWO Reed is radio officer and communications radio division officer onboard *Kitty Hawk*. His educational background consisted of various programs, "I spent a semester on campus at John Brown University in Silom Springs, Ark. Later, I took some USAFI correspondence courses and University of Maryland extension courses."

Reed also took part in CLEP (College Level Examination Program) and attended the Chapman College Residence Education Centers at NAS Miramar and NAS San Diego.

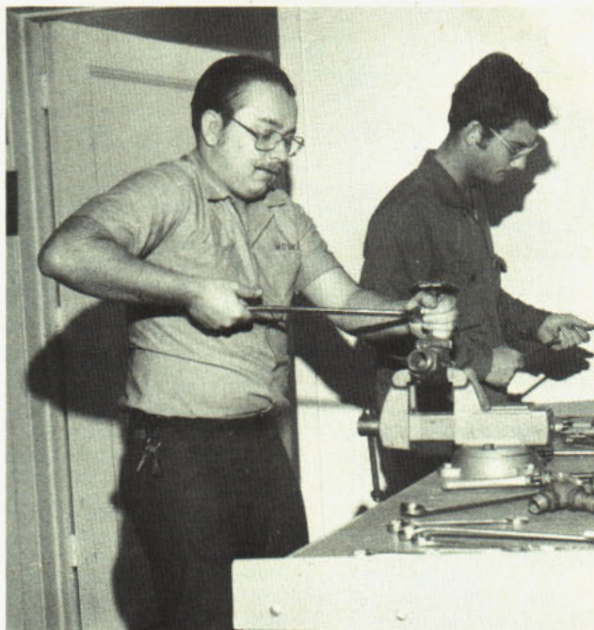


# New Training Method: Marine Propulsion Skills

An effective method of training has been initiated with the engineering systems training department at the Pacific Fleet Training Center, San Diego, Calif. The Marine Propulsion Skills course provides training in engineering knowledge skills to fleet personnel in the MM, BT and EN ratings.

The course contains 14 learning modules covering knowledge/skills appropriate to all engineering propulsion systems, 35 lessons and eight job performance programs. The course can be successfully completed by an experienced fireman in 10 days.

The individualized learning system (ILS) provides the student with a "carrel," or enclosure, equipped with an audio cassette tape deck and frosted, visual playback, viewing screen. Each of the 14 carrels permits individualized instruction through the use of four learning areas: programmed instruction, audiovisual instruction, audio instruction and self-study guide. (Articles about individual learning systems have previously



appeared in the August 1972 and October 1974 issues of ALL HANDS.)

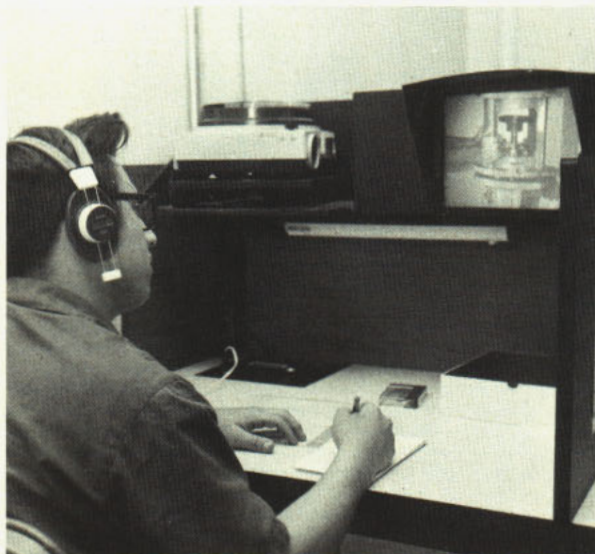
The Marine Propulsion Skills course, first to be tailored to this new method, includes metal fasteners and hand tools in Module One; pipe tubing and fittings in Module Two; and packing, gaskets and insulation in Module Three, among others. The 35-lesson course contains three worksheets and a job performance program.

The student is given progress checks and job performance tests to measure comprehension. At the end of each module, the student is given an examination on the material which he or she has just covered. If the student passes, he or she then proceeds to another module of choice. However, any single incorrect answer on the end of a module test requires that the student review the subject matter and retake the test.

There are many advantages. Each student is exposed to the same amount of knowledge but the time required to comprehend the material may differ. Under formalized lock-step classroom training, an instructor stands before the students and lectures the entire class. This sometimes results in a student not fully comprehending all the subject matter.

Lock-step training establishes 62 per cent as the minimum passing grade, allowing a student to pass while missing 38 per cent of the material. ILS training requires a student to score 100 per cent on all progress checks and tests before proceeding to the next lesson. Lock-step instruction progresses at the pace of the average student while ILS training permits slow students to progress at their own pace and does not impede progress of faster students.

This new concept of propulsion training was initiated at the San Diego Fleet Training Center after liaison with the Propulsion Engineering School at Great Lakes, Ill. Formally established in early 1974, ILS began operation in January 1975. Fleet response has been enthusiastic. Quota availabilities can be obtained by telephone: autovon 958-1664/1668 or commercial (714) 235-1664/1668.





# Correspon- dence Courses

The Chief of Naval Education and Training Support recently issued the following list of new and revised Navy Correspondence Courses. Those marked with an asterisk are confidential, all others are unclassified.

Enlisted Courses	NavTra or NavEdTra No.	Super- sedes	No. As- sign- ments
Aircrew Survival Equipmentman 3&2	91629-1F	91639-1E	13
Aviation Antisubmarine Warfare Operator*	91688-A	91688	15
Aviation Electronics Technician 2	91370	91613-2B	16
Aviation Electronics Technician 3	91369	91613-2B	22

Aviation Maintenance Administrationman 1&C	91499-2	91499-1	8
Aviation Storekeeper 3&2	91674-2	91674-1A	40
Electronics Technician 3&2 Part II Radar	91237	91375-3A	18
Journalist 3&2	91452-3	91452-2	19
Gunner's Mate Technician 3&2	91377-D	91377-C	15
Operations Specialist 1&C*	91268-2	91268-1A	11
Patternmaker 3&2	91549-2	91549-1A	12
Photographer's Mate 1&C	91649-E	91649-D	15
Postal Clerk 3&2	91401-3D	91401-3C	10
Radioman 1&C*	91405-4	91405-3C	11
Ship's serviceman 3&2	91447-2A	91447-2	9
Sonar Technician 1&C*	91265-2	91265-1	7

## Officer Courses

Disbursing, Part II	10424-A2	10424-A1	6
Navy Admiralty Law Practice	10725-A3	10725-A2	2
Navy Food Service Management	13108-1	13108	6
Navy Missile Systems* Operational	10409-B1	10409-B	13
Communications*	10760-C1	10760-C	8
Principles of Naval Engineering, Part I	10507-3	10507-2	11
The Process of Management	10947-B	10947-A2	5

# School for Welders

Welding is one of the most interesting, exciting and yet important phases for young men attending Steelworker "A" School at the Naval Construction Training Center, Port Hueneme, Calif.

During the 12-week school, a total of four weeks is devoted to teaching the basics of welding to young steelworkers. The first two weeks students receive instruction in gas welding, after which two weeks are spent on arc welding.

Each phase begins with three to four hours of theory. After that, time is spent "learning by doing." Closely supervised by their instructors, students apply the theory in learning the basics of welding.

In gas cutting, they learn to hook up regulators, hoses, torch butts and cutting attachments. Then students are instructed in proper methods of making straight, bevel and hole cuts. As they continue in this phase, attention switches from gas cutting to gas welding.

The old adage "practice makes perfect" describes the learning process students face; they may not come out as perfect welders but it isn't for lack of practice.

Upon completion of the two-week gas phase, students change over to arc welding. In this section, students learn the proper methods for adjusting direct current for desired amperage and polarity. Safety precautions are highly stressed.

Using this knowledge on which to build, the students spend more than 60 hours in the shop in practice and

testing. It is an exciting phase for all students but one of extreme importance for those entering the steelworker rating.

At NCTC new welders receive the basic instruction that will enable them to carry on the "Can Do" spirit of the Seabees serving all over the globe.

—Story and photos by JO3 Scott D. Smith





# Service Colleges for Officers

Naval officers: are you interested in attending a service college? ALL HANDS, through this presentation, hopes to spark your attention by listing what schools are available, which officers are eligible, how selections are made and the objectives and importance of these colleges. Historically, service colleges have played a major role in the professional development of leadership in the Armed Forces by professionally broadening selected officers to prepare them for greater responsibilities. The career officer is at the core of this program.

Policy changes have been made to ensure that only the best-performing officers are selected for a service college, and that a high percentage of selectees actually attend a service college. These changes follow an extensive analysis made recently by the Chief of Naval Personnel to determine the effectiveness of service college selection and assignment procedures.

As outlined in the new BuPersNote 1301 dated 14 Apr 1975, the objective of the Navy's service college program is to develop improved capability in selected naval officers to provide intellectual leadership and exercise sound judgment in defense matters.

Individual service colleges and their varying curricula emphasize different aspects and levels of service and joint functions, resource management and national strategy and policy. To satisfy Navy requirements in senior command, key staff and policy-making positions in the national and international security structures, CNP has established service college student input goals. These state that 30 to 35 per cent of captains will have attended a senior service college and 25 to 35 per cent of lieutenant commanders will have attended a junior service (command and staff) college.

The service college program includes the following schools:

**Senior Colleges (U. S.)**—Naval War College (Naval Warfare Course), Air War College, Army War College, Foreign Service Institute (Senior Seminar in Foreign Policy), Industrial College of the Armed Forces, National War College.

**Senior Colleges (Foreign)**—Canadian National Defense College (one per year for three years; fourth to USMC), Greek Naval War College, Inter-American Defense College, NATO Defense College, Norwegian Naval Defense College, Royal College of Defense Studies (one each odd-numbered year).

**Junior Colleges (U. S.)**—Naval War College (Command and Staff Course), Air Command and Staff College, Armed Forces Staff College, Army Command and General Staff College, Marine Corps Command Staff College.

**Junior Colleges (Foreign)**—Brazilian Naval War College, French Naval War College, German Command and General Staff College, Indian Defense Service Staff College, Peruvian Naval War College, Royal Air Force Staff College, Royal Naval Staff College, Spanish Naval

War College (one each even-numbered year), Taiwan Naval War College, Uruguayan Naval War College, Venezuelan Naval War College.

Negotiations are in progress to expand the foreign service college program. A small number of additional colleges may be added in later years.

Service college programs are for selected Regular, Reserve and TAR officers in the grades of commander and captain for senior colleges, and in the grade of lieutenant commander for intermediate colleges. Some officers in these grades, however, are not eligible, since service college attendance is not warranted or essential for effective performance in future assignments. Ineligible officers are those in the Chaplain Corps, Dental Corps, Nurse Corps, limited duty and warrant officers.

Normally, an officer will be selected to attend only one service college at a given level. Further, attendance at a junior college is not a prerequisite to selection for a senior service college.

By FY-76, all previous selection processes will have been consolidated into a single pattern which will afford all eligible officers two opportunities for junior service college selection, commencing in the year of selection to lieutenant commander. There will be three opportu-





## on the Educational Front

nities for senior service college selection, commencing in the year of selection to commander, with the final screening in the year of selection to captain.

An officer selected may attend service college during any one of the three years following his selection. During the period of transition to the revised selection procedures, an officer presently banked is eligible to attend until his promotional group is reviewed by the next selection board.

Commencing in FY-76, the majority of service college selections will be made by promotion selection boards reconstituted as service college selection boards. These boards will consider unrestricted line and Supply Corps officers in the eligibility zones for captain, commander and lieutenant commander. A separate service college selection board will convene annually in November to screen mid-grade unrestricted line and Supply Corps commanders and lieutenant commanders, and to make all restricted line and staff corps (less Supply Corps) and TAR selections.

For officers of the unrestricted line and Supply Corps, selection quotas are provided to the board based on the sizes of promotional groups to be considered. Restricted line and staff corps officers (less Supply Corps) are nominated by appropriate flag officer designator advisors, based upon their availability to attend during the next year following board selection. Six nominations per quota to be filled during the ensuing year are presented to the selection board.

Service college selection boards are charged to select the best qualified officers from among those eligible, regardless of their warfare specialties, subspecialties or current assignments. When appropriate, the board may recommend attendance at a specific college, based on a selectee's background.

Assignment slating for new selectees occurs after each selection cycle, to determine attendees for that year and which colleges they will attend, and to make tentative slatings for the two following years. While it is not necessary for officers to indicate a desire to attend a service college, it is appropriate to indicate a choice of college in the "Remarks" section of the Officer Preference Card.

Naval officers of the restricted line and staff corps attend service colleges, subject to the following constraints:

- Engineering duty officers (ships engineering) attend Naval War College and Industrial College of the Armed Forces, ICAF (one each to NWC junior and senior course, and to ICAF annually).
- Engineering duty officers (ordnance engineering) attend ICAF only (one annually).
- Aeronautical engineering duty officers (aeronautical engineering and aviation maintenance) attend ICAF only (one each, annually).
- Special duty officers (cryptology) attend Naval War College, ICAF and National War College (Naval War College annually, one to senior course and two to junior course; one every two years to ICAF; and one every third year to National War College).
- Special duty officers (intelligence) attend Naval War College, AFSC, National War College and ICAF.
- Special duty officers (public affairs) attend Naval War College only (one each may qualify for assignment

to senior and junior courses, annually).

- Special duty officers (geophysics) attend Naval War College, AFSC and ICAF only (Naval War College, one to senior course and one to junior course annually; two annually to AFSC; and one every third year to ICAF).

- Medical Corps officers attend ICAF only (one officer biennially; odd-numbered FY).

- Medical Service Corps officers attend USMC Staff College and Armed Forces Staff College only (two total, annually).

- JAG Corps officers attend Naval War College and AFSC only (one annually to Naval War College, alternating junior and senior course, and one to AFSC).

- Supply Corps officers attend Naval War College, ICAF and National War College only (Naval War College: five to senior course, except every third year, which will be four, and eight to junior course, seven to ICAF; eight to AFSC; and one to National War College every third year).

- Civil Engineer Corps officers attend Naval War College, ICAF, AFSC and National War College only (Naval War College, one annually to each course; one to ICAF; four to AFSC; and one every third year to National War College).

Officers attending a foreign college should have potential for a utilization tour in the country or area. Officers must be sufficiently fluent in the language of the host country to undertake the course of instruction. Preparatory language training may be provided, if necessary.

Officers attending the Naval War College must hold a baccalaureate degree.

Officers normally will be slated to attend a service college at or near their current prospective rotation dates (PRD), during the three-year period following selection. Certain types of duty, however, may result in deferral from attending at PRD. Where deferral is necessary, attempts are made to assign selectees to service colleges immediately after the deferral assignment. While the submarine and nuclear surface communities are deficit-manned, these officers will attend service colleges only in token numbers.

Should deferral result in an officer not attending during the three-year period following selection, he loses current eligibility and becomes subject to reselection by subsequent board action. It is anticipated that an officer will have at least an 80 to 85 per cent overall probability of eventual attendance if selected when first eligible.

A selected officer who declines attendance at a service college must do so by official letter to the Chief of Naval Personnel. He will then be ineligible for later selection to the category (junior or senior) of service college which he declined. However, deferral requests for compassionate reasons are not considered declinations.

Officers accepting orders to a service college incur an active duty obligation of two years, commencing upon completion of the course of instruction. In addition, education beyond one year is subject to a two-for-one payback. The period of obligated service for service college is additional to any other obligated service which may have been incurred previously.

—JO1 Ken Testorff



# Postgraduate Education

Does your latest Officer Preference Card reflect your postgraduate preferences accurately? According to the new OpNavNote 1520 dated 14 Apr 1975, your next opportunity for selection for graduate level education will be August 1975.

This new notice provides information on the scope of the Navy postgraduate educational program and other advanced education programs presently planned for the academic year 1976-77 (FY77-77). It also establishes officer eligibility for consideration by the 1975 August regular postgraduate selection board and the FY77 and 77 doctoral study selection board. In addition, it provides information on academic prerequisites and guidelines for the various curricular programs, and provides instructions to officers for indicating or updating their postgraduate curricula preferences, or for submission of official letter request, as appropriate.

The Navy's postgraduate program is designed to meet subspecialty billet requirements for officers educated at a graduate level, that is, less than a master's, master's or doctorate degree. Many unrestricted line officers need additional education beyond the course content and level they have upon entry into the Navy in order to qualify as subspecialists. Subspecialty areas are essential to the overall effectiveness of the Navy.

The restricted line and staff corps communities fulfill the requirement for exclusive concentration in specific major areas of support. Additional education for these communities in certain academic disciplines is essential for effective support of the operating forces.

The Navy's program is designed to capitalize upon the individual officer's abilities, experience and potential by extension of his studies to include specialized areas and to equip officers with postgraduate education at the master's or doctor's degree level to meet requirements. Participation in the postgraduate program normally is limited to one curriculum which will raise the professional development level of the individual officer.

Officers who have attained a P or D code in a given area, either through the postgraduate program or on their own initiative, normally will not be selected for a master's level postgraduate curriculum in the same or closely allied area.

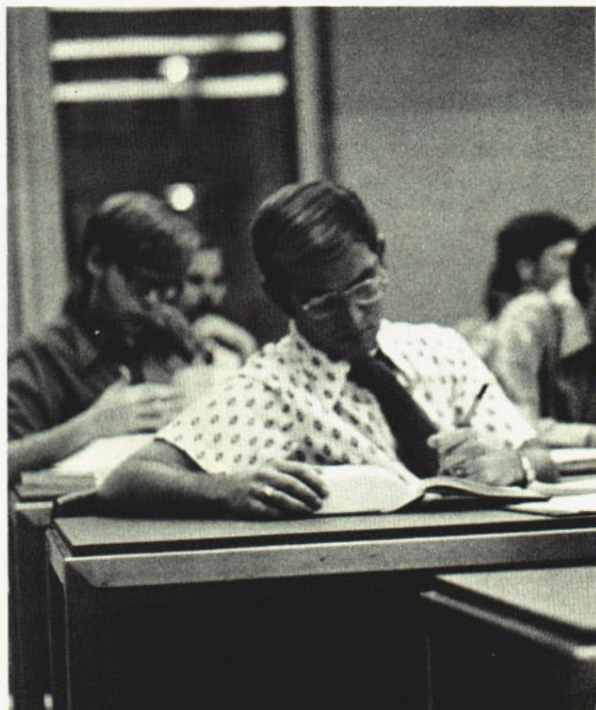
For example, an officer with a P-code in the field of management or international affairs will not be selected for a course of study leading to another P-code in these fields, unless the present P-code was obtained through an off-duty educational program and is not applicable to the officer's designator. An officer with a P-code in an engineering or science field will not be selected for a course of study leading to another engineering or science P-code. An officer with a 0000 P-code is eligible for any course of study for which otherwise qualified.

There is a requirement for a limited number of officers with dual masters' in an engineering and a management area.

Graduates of the Master of Science (MS) Aeronautical Systems Program, University of West Florida, are advised that the Chief of Naval Personnel (CNP) does not award a subspecialty code for completion of the program. In addition, it cannot be assured that credits earned short of a degree are completely acceptable for advanced academic standing at another institution. Therefore, graduates of the MS Aeronautical Systems Program, University of West Florida, are eligible for all curricula in accordance with their designators.

Detailed information on postgraduate curricula conducted at the Naval Postgraduate School (NAVPGSCOL), Monterey, Calif., and general information on curricular programs at the various participating civilian educational institutions can be found in the Catalog of NAVPGSCOL. This is published every two years by NAVPGSCOL and distributed to all major ships, large staffs, unit commands and certain shore activities. (Commands not on the normal distribution list and those needing additional copies of the catalog may request it by sending a check for \$1.25 to the Navy Exchange Bookstore, Naval Postgraduate School, Monterey, Calif. 93940.)

NAVPGSCOL's engineering science curriculum is provided as a tool for accommodating officers who desire an advanced technical education but who are deficient in mathematics or the physical sciences. The curriculum's flexibility permits those officers with undergraduate background deficiencies and those who last





## on the Educational Front

attended a formal college or university several years ago, to spend a period—usually six months (two quarters)—undergoing course work in undergraduate mathematics and the physical sciences in preparation for entry into advanced technical curricula.

Graduate curricula at Monterey, varying in length from 12 to 24 months (four to eight quarters), are designed to provide officers with the knowledge required for intelligent technical direction and management of the Navy's activities in such fields as administrative science (material, financial, personnel, human resources management), aeronautics, communications engineering, computer science, electronics, underwater acoustics, environmental sciences, computer systems, telecommunications systems, MSC transportation, naval engineering, naval intelligence, antisubmarine warfare, operations research and systems analysis, systems acquisition management and weapon systems engineering. Flexibility in the design of these curricula permits tailoring of programs to provide emphasis in areas of particular interest to the unrestricted and restricted line and staff corps officer communities.

Some graduate curricula in specific fields of study are conducted at civilian educational institutions. The civilian university programs supplement the programs of the NAVPGSCOL.

In late 1970, the Chief of Naval Operations (CNO) directed establishment of a CNO Scholars Program whereby a small group of highly selected officers would be afforded an opportunity to pursue graduate education in fields of study compatible with their respective specialty and subspecialty, and within the framework of Navy P-code billet requirements. Applications for this program are processed by a special panel of the postgraduate selection board.

Exceptionally competent officers may be selected for doctoral level education in curricula consistent with the needs of the Navy. This may be accomplished by direct enrollment in the Doctoral Study Program for selected officers already possessing a master's degree, or by continuation of studies in a regular Navy-sponsored postgraduate curriculum in which already enrolled.

The nine-month postgraduate intelligence course conducted by Defense Intelligence School provides instruction in basic principles and techniques of intelligence operations. Upon graduation, officers are normally assigned duties in intelligence-related billets.

Anyone having questions regarding admission procedures or desiring additional information on specific postgraduate curricula may write to the Dean of Admissions, Naval Postgraduate School, Monterey, Calif. 93940, or telephone (408) 646-2391 (autovon: 479-2391).

The newly formed Office of Continuing Education at NAVPGSCOL is in the process of establishing an academic counseling service to assist officers in developing an individual educational plan coordinated with Navy requirements of the subspecialty system. Inquiries may be directed to the Program Manager for Educational Counseling (Code 530) at the NAVPGSCOL, or telephone (408) 646-2984 (autovon: 479-2984).

Officers assigned to postgraduate study under the Navy's postgraduate program must agree that upon completion or termination of a graduate education program they will serve on active duty for a period equal

to three times the length of the period of that education, or a maximum of four years' service.

The next regular postgraduate selection board will be convened by CNP in August 1975; the Doctoral Study Program selection board will be convened 27 Aug 1975 and 25 Feb 1976.

The regular postgraduate selection board will pick a group of qualified officers for postgraduate education to fill quotas which reflect the Navy's subspecialty billet requirements in the various fields of study available. Selection of officers for fully funded programs will be on the basis of performance, academic qualifications and stated preferences of the individual. Proven academic performance in off-duty educational programs will enhance selection. It is worthy to note that there is a shortage of officers qualified for input into the engineering fields of study.

Officers selected for the CNO Scholars Program will be notified immediately by individual letters. All other selectees will be designated and thereafter classified as principals (assignable in academic year 1976-77 through 1978-79) or alternates (assignable, if available, only as vacancies occur during academic year 1976-77). The complete selection list will be published as an annual BuPersNote 1520 at the earliest feasible date after completion of the postgraduate selection board.

The Doctoral Study Program selection board will consider and select officers for the direct enrollment and continuation programs.

Assignment to postgraduate instruction is not assured until orders are executed. Although every effort is made to assign the maximum number of selectees to postgraduate instruction during the academic year for which they have been selected, individual assignments must remain subject to availability of qualified reliefs and the overall requirements for experienced officers in operational billets. All officers ordered into postgraduate education programs are required to carry a full academic load on a year-round basis.

The determination of continuation status for those officers who fail academically or fail selection for promotion will be made by CNP, in coordination with the Chief of Naval Education and Training (CNET), based upon the recommendation of the Superintendent, NAVPGSCOL, for students under his cognizance, or the reporting senior for those officers enrolled in civilian institutions.

All officers desiring fully funded graduate education at the NAVPGSCOL or at civilian universities should take appropriate preparation courses before selection for resident programs. Under the guidance of the NAVPGSCOL Office of Continuing Education, new refresher and preparation courses are being developed for individual self-study. Differing from correspondence courses, these offerings are in the Personalized System of Instruction (PSI) and include contact with a qualified naval officer tutor in the local area. Courses available are listed in the new Continuing Education Catalog. Further information may be obtained by writing to the Director of Continuing Education (Code 500) at the NAVPGSCOL.

Officers selected for postgraduate curricula at NAVPGSCOL or civilian institutions should make every effort to complete appropriate refresher courses before



reporting. Until the development of PSI courses in mathematics, the NAVPGSCOL will provide a special self-study course in mathematics (calculus, with brief preliminary coverage of trigonometry and analytic geometry), designed for completion in about 150 hours. The course material may be requested directly from the Superintendent, NAVPGSCOL (Code 0212), Monterey, Calif. 93940.

An officer whose latest preference card does not reflect his postgraduate preferences accurately should submit a new card. In the case of the current August 1975 board, preferences considered will be those that were on file in the Bureau of Naval Personnel as of 1 Jun 1975. Although letter requests are not generally required, an officer has the option of submitting a letter to CNP (attention of the individual's cognizant assignment officer), calling attention to any facts which he feels will particularly qualify him for one or more curricula, or those qualifications which otherwise might not be obvious from information in his official BuPers record.

All officers not in educational group 1976, but who are interested in the CNO Scholars Program, should forward a letter request to CNET (Code N1313). Such requests must be received by 1 Jun in the year selection is made. Individual officers should include in their requests the desired field of study; a resume of prior academic achievements, with transcripts, if available; and Admission Test for Graduate Study in Business (ATGSB) or Graduate Record Examination (GRE) test scores, if previously taken.

All officers interested in the direct enrollment Doctoral Study Program should forward applications to CNET (Code N1313) during the year to correspond with convening dates. Applications not received in time for consideration by the August 1975 convening date will be held for the February 1976 convening date.

Individual officers should include in their request for the direct enrollment Doctoral Study Program the following:

- Desired field of study. Where it is feasible and compatible with the individual's prior academic background and designator, an alternate field of study should be indicated in case the primary choice is not compatible with Navy requirements for Ph.D. educated officers.

- Resume of prior academic achievements, supported by transcripts or summaries of work completed.

- ATGSB or GRE test scores if tests were taken previously.

- A statement reflecting the individual's current status regarding admission on his own initiative to a civilian university as a doctoral degree candidate; as being in current pursuit of doctoral studies, with an indication of number of hours of advanced course work completed; or as to the steps anticipated towards contacting civilian universities or NAVPGSCOL to determine eligibility for admission to a doctoral degree program.

Officers interested in the continuation Doctoral Study Program should, at least nine months before completion of their master's degree program, forward a letter request to CNET (Code N1313), copy to individual's detailer, for extension of duty under instruction tour to permit completion of Ph.D. studies. Individual re-

quests will be endorsed by the commanding officer and will include the following data:

- Curriculum in which enrolled and current status insofar as completing master's degree requirements.

- Estimated time required to complete Ph.D. requirements.

- Whether or not candidates have been admitted to doctoral degree candidacy (either at NAVPGSCOL or at a civilian university), as appropriate, with supporting documentation from the school concerned.

- Transcripts or summary statement reflecting grades and course work completed to date under the master's degree program.

In order to enhance their selection opportunity, officers who do not have noteworthy undergraduate records or who last attended a formal college or university several years ago should make every effort to enroll in nontraditionally delivered undergraduate or graduate level courses, on their own time, to strengthen their academic background and to prove their capability to successfully pursue graduate study. The NAVPGSCOL Education Counseling Program Manager (Code 530) should be contacted for assistance and guidance.

At the earliest feasible date, those officers interested in civilian university curricula requiring the ATGSB or GRE should make arrangements to take the tests, if not taken previously. Information on test dates and registration procedures may be obtained by writing to the Educational Testing Service, Box 1502, Berkeley, Calif. 94701, or Box 955, Princeton, N. J. 08540. Officers registering to take the test are requested to indicate in the "score reports" column of the registration form the following sponsor code, "R5806-CNET 1313." This will ensure that copies of the test scores are received by CNET.

Officers who have taken one or both of the tests on their own initiative should either forward a copy of their scores to CNET with a copy to CNP (Pers-3613) or request the Educational Testing Service to send a copy to CNET. The availability of these scores will assist the postgraduate selection board in evaluating an officer's chances of gaining admission to participating civilian universities.

Officers, especially those from Officer Candidate School (OCS) and NROTC commissioning sources, should ensure that their official BuPers records contain a complete transcript (showing degree awarded and date). All officers should ensure that transcripts of any advanced undergraduate or graduate course work completed on an off-duty basis are forwarded to CNP for inclusion in their official record with copy to NAVPGSCOL at the earliest feasible date following completion of such course work.

Officers selected for programs conducted at various civilian educational institutions will submit a formal application for admission in compliance with instructions provided by CNET (Code-N1313).

Officers selected by the regular postgraduate selection board, but who do not desire postgraduate education, may decline their selection in writing to CNP (Pers-440). Timely submission of declination letters is necessary in order to facilitate the orderly assignment process under the 12-month advance slating concept.

—JO1 Ken Testorff



# ALL HANDS VISITS

*"Congratulations on your selection for graduate education. We hope to count you among those enrolled at the Naval Postgraduate School."*

Most naval officers find great satisfaction in receiving a letter notifying them of their selection for graduate education. This satisfaction may be tempered somewhat as the selectee begins to contemplate a full-time graduate course of study—what it will entail, where it will be offered, what will be expected?

Some doubts may arise in the officer's mind as to his or her ability to pursue graduate level education, leading to a request for more information. Sometimes the information obtained is not as current as it might be, creating possible confusion and a slightly distorted view of what postgraduate education can mean to the professional naval officer.

In anticipation of the foregoing, this article attempts to furnish information about graduate education, as provided at the Naval Postgraduate School (NPS), to help eliminate misunderstandings and increase awareness on the part of those selected. This tack is taken because the majority of those naval officers selected for graduate education will attend NPS, which is located at Monterey, about 115 miles south of San Francisco on the Pacific coast. Joining them will be officers from the other U. S. uniformed services and from more than 20 allied nations.

## Admissions Procedures

U. S. Navy officers interested in admission to NPS are referred to OpNav Notice 1520, which describes postgraduate education programs. This directive outlines the various education programs available and indicates the method for submitting requests for consideration for each. Under these guidelines, the Chief of Naval Personnel convenes a board annually to select officers for postgraduate education. The selection is based upon professional performance, academic background and ability, within quotas which reflect Navy needs in the various fields of study available.

Officers on duty with other branches of service are eligible to attend NPS. They should apply in accordance with the directives of their respective services.

General qualifications for admission are similar, with most curricula at Monterey requiring a baccalaureate degree with above-average grades. Completion of calculus with above-average grades is required for certain curricula, while others require only one or two mathematics courses at or above the level of college algebra or trigonometry. For specific requirements of each curriculum, the NPS catalogue should be consulted. Any officer may obtain an evaluation of his academic qualifications for admission by contacting the Dean of Curriculum, Naval Postgraduate School, Monterey, Calif. 93940.

Because many of those selected for graduate education have been out of a formal educational atmosphere



Above: Aerial view of Naval Post Graduate School. Right: Electron microscope in use at the postgraduate school.

for a considerable period of time, a refresher course in mathematics is available from the school. A self-study course in calculus, it can be completed before arrival and will be of great assistance in improving one's mathematics background and restoring study habits. Officers are encouraged to undertake this course, which can be obtained by writing to the Superintendent (Code 500), Naval Postgraduate School, Monterey, Calif. 93940.

Upon entry, each student's prior academic record is evaluated for possible transfer of credit. A course given at NPS may be validated when the student previously has taken a course covering the same material. No credit is awarded in this case, but the student is exempt from repeating the NPS course. All graduate level courses taken after completion of the baccalaureate degree may be accepted for credit. Graduate level courses certified to be in excess of requirements for the baccalaureate degree and taken in the last term before award of the baccalaureate degree may be accepted for graduate credit under certain circumstances.

Students are encouraged and permitted to seek validation or credit for courses by taking a departmental examination. This allows students to make use of knowledge gained through self-study, experience, or service-related courses. Through this program, NPS expects to minimize the amount of time required by students to complete their curricular program.

## Organization

The Superintendent at NPS, currently Rear Admiral Isham Linder, is the school's ranking official. His principal assistants are a Provost/Academic Dean (Jack R. Borsting, Ph.D.), who is the senior member of the



# NPS MONTEREY

civilian faculty, a Director of Programs (Captain Donald W. Kiley), a dean of Programs (W. F. Koehler, Ph.D.), and a Director of Military Operations and Logistics (Captain Edward E. Riley).

The academic programs and direct supporting functions are administered and operated through a unique organization composed of curricular offices and academic departments. The former are staffed by naval officers, assisted by civilian faculty members, with three primary functions: academic counseling and military supervision of students, curriculum development and management, and liaison with curricula sponsors.

Current curricular areas are administrative science, computer science, aeronautical engineering, electronics and communications engineering, underwater acoustics, environmental sciences, naval engineering, naval intelligence, operations research/systems analysis, antisubmarine warfare and weapons engineering.

Teaching functions and thesis supervision are accomplished by a faculty, which is approximately 85 per cent civilian, organized into nine academic departments and two interdisciplinary groups: aeronautics, computer science group, electrical engineering, government, mathematics, mechanical engineering, meteorology, oceanography, operations research and administrative sciences, operational systems technology group and physics and chemistry.

## Degrees and Accreditation

The Superintendent is authorized by law to confer bachelor's, master's, engineer and doctoral degrees in engineering or related fields to qualified graduates of the school. NPS was first accredited in 1962 as a full member of the Western Association of Schools and Colleges. Initial accreditation as an associate member was given in 1955. Specific engineering curricula have been accredited by the Engineers' Council for Professional Development (ECPD) since 1949.

## Faculty

There are several factors which establish the integrity of a graduate university. Undoubtedly the most important are the quality and accessibility of the faculty.

The faculty at NPS rate high in both respects. Of the civilian faculty, 82 per cent hold the Ph.D. or an equivalent degree. Ninety-eight per cent of the military officers on the faculty hold advanced degrees. The faculty are active in professional organizations in their fields, many of them holding offices and important committee posts. Because the faculty at NPS have a primary responsibility to teach, students can expect to have designated faculty members carry out the programs of education.

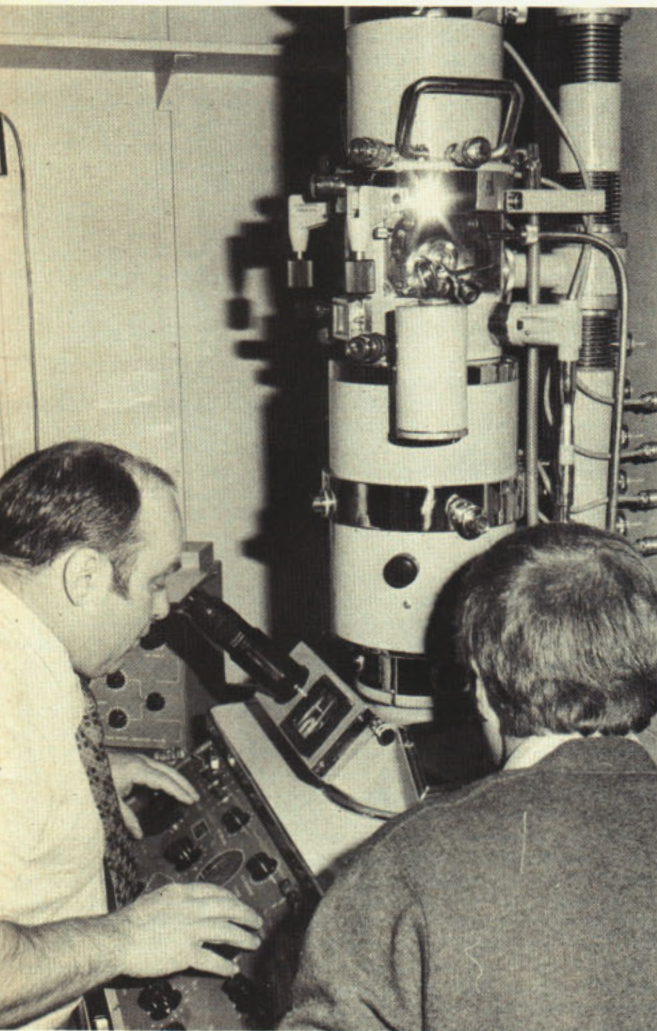
There are no graduate assistants or other supernumeraries acting as buffers between faculty members and students. Also, because the student/faculty ratio is low, academic rapport of unequalled quality is attained.

Faculty members are involved in research, most of which is conducted at the request of Naval Systems Commands, research laboratories and other Department of Defense agencies. Students work along with faculty members in the research effort, permitting the development of theses required for graduation.

## Research

Research marks the highlight of the academic experience for students as they enter into real life problem-solving and have the opportunity to bring their newly acquired education to bear upon the process. Faculty members also continue to update their abilities through continued research and support of student thesis projects.

The NPS program has two characteristic features that





## on the Educational Front

distinguish it from civilian university research programs.

First is the emphasis on Navy/Defense-related programs. This emphasis is due less to statutory limitations than to student and faculty interest. Most students come to NPS with six or more years of operating experience with the fleet, bringing with them great interest in military problems. Those interests motivate them to seek research opportunities in their graduate studies. Secondly, most students are working toward a master's degree, in which a research thesis may be a major requirement.

There are currently more than 130 research projects underway by faculty/student teams. Of these projects, some of the more promising are those dealing with acoustic propagation in the ocean; optical propagation studies and experiments; operational meteorological prediction; ocean boundary layer studies; signal processing; electronic warfare; tactical and strategic warfare analysis; cost effectiveness; microcomputers; and advanced development in computer acoustic processing.

### Facilities

The quality of the research and academic programs is greatly dependent upon the complementary quality of the student body and the faculty. With the modern and Navy-related facilities available, NPS students and faculty are able to undertake significant and timely research.

Each department at the school has developed laboratories and academic support facilities to meet the needs of its students.

At NPS, one finds a range of laboratories housing virtually every sort of equipment needed to test a hypothesis, prove a theory or check out a problem. A linear accelerator, wind tunnels, and laboratories for the study of acoustics, fluids, material science, oceanography, radar and microcomputers constitute some of the facilities. Shipboard equipment frequently supplements these. Sonar problems are simulated in the electrical engineering department computer center either as printouts or on a visual display terminal, where the results can actually be seen as the problem progresses.



The meteorology department at NPS has computer and teletype terminals for access to the Naval Weather Service, weather satellite tracking antennas, and balloon launching facilities. The department also has all the equipment normally associated with a naval weather station, although it does not function as one.

The physics and chemistry department operates lasers in research in plasma physics and laser optics. Atomic research is conducted with the department's linear accelerator, while acoustic characteristics are studied in the anechoic chamber. Acoustical tanks are also used to study properties of underwater sound propagation. Wind/wave relationships are studied in the department's wind/wave tanks, and silting and marine sediment are studied in the sediment tank.

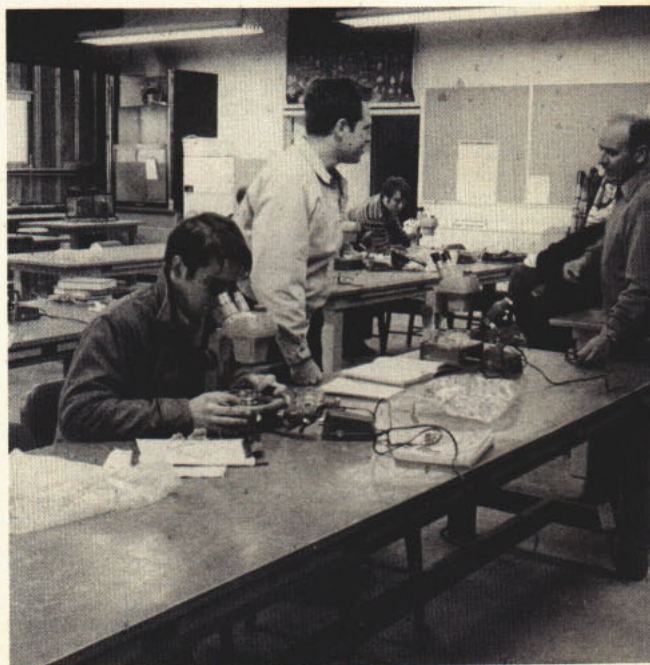
One of the most active facilities is operated by the oceanography department. It is the research vessel *Acania*. Formerly a luxury yacht, *Acania* was converted to an oceanographic research vessel in 1971. The vessel is sponsored by the Oceanographer of the Navy.

In addition to the oceanography department, the departments of physics and chemistry, meteorology, mechanical engineering and aeronautics, among others, conduct research on an interdisciplinary basis. Students, working with faculty, are major users of *Acania*.

Two other key facilities are the W. R. Church Computer Center and the school library.

The computer center houses a complete system to

Below from left to right: Antisubmarine warfare students visit USS Brooke to study ASROC System. Oceanography students in beach laboratory. The *Acania*, with Mobile Environmental Laboratory aboard, is rigged for fog studies.





support faculty and students in their research and classroom work. Every student at NPS has opportunities to use the computer system. In a typical month, 700 students use the batch-processing system and 150 others are active in the time-sharing mode.

For all types of research and reference, the NPS library contains more than 400,000 books and bound periodicals, research and development documents, bibliographic volumes and pamphlet items. Research and development documents are accessible through the library's computerized information retrieval system, SABIR 3.

In addition to the compilation of computer-generated bibliographies on request, the library offers students a selective dissemination of information service. Students may avail themselves of this and establish continuing subject interest profiles with the Technical Reports Branch.

Subsequently, all input into the SABIR 3 data banks is routinely searched and personalized bibliographies are made available to the participants on a biweekly basis.

Also housed in the library is a television dial access retrieval system. This contains videotape programs which supplement the classroom lectures for several courses.

### Student Life

Students discover rather quickly that life at NPS can be a positive experience. The campus is unusually attractive and reflects the beauty of the central coast area of California. A year-round moderate climate permits many outdoor activities, both academic and leisure-time.

Students have no major duties beyond applying themselves diligently to their studies. It is expected that

each will maintain a high level of scholarship and develop attributes usually associated with a scholar seeking knowledge and understanding. Program schedules are such that each student should anticipate spending several hours in study each evening to supplement time available for this purpose between classes.

For those officers with families, the Navy provides an attractive housing area called La Mesa Village. About 900 families are in residence at any time in Wherry and Capehart housing and new town houses.

The Village has its own elementary school and a convenience store for occasional food needs. Most personnel use the Navy Exchange on the NPS grounds or use the PX and commissary at Ft. Ord, about five miles north of the school. Medical facilities include an on-base dispensary, which is supported by Ft. Ord's hospital facility. Many other facilities, including recreational, are available on campus or at Ft. Ord.

### Prescription for the Future

You may ask, "Should I apply for graduate education?" The words of Vice Admiral B. J. Semmes, written more than ten years ago when he was Chief of Naval Personnel, are offered as an answer. He stated, "... performance will be more and more dependent upon the officer's ability to understand and cope with the new scientific environment of which he is a part. Thus, advanced education is sure to become one of the vital steppingstones of his professional career."

As if to emphasize his words, of a group of 37 officers promoted to flag rank last year, 17 hold master's, engineer or doctoral degrees.

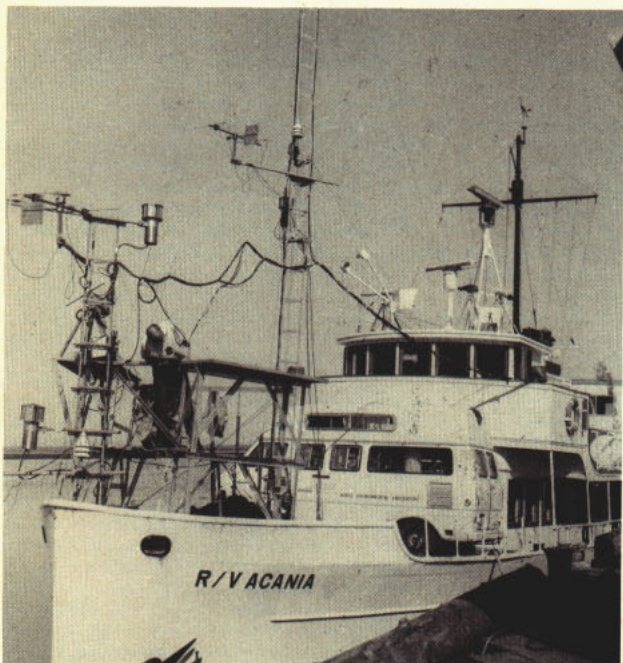
Superintendent RADM Isham Linder voices the philosophy of advanced education, saying, "The Navy's graduate educational programs have been developed to provide a small percentage of selected, fleet-experienced officers with advanced technical, scientific and administrative education in areas directly related to naval operational and technological progress. Professional officers must also know how fleet requirements can be translated into efficient procurement action, and this specific educational requirement has led to programs in naval procurement management.

"The curricula at NPS provide programs in each technical area specifically directed at naval requirements, make full use of the officers' experience at sea and are firmly based on academic excellence in examining and adapting the continuing developments of science, technology and analysis."

It is now obvious that a relevant advanced education will be required for almost every naval officer of the future.

### Information

Those officers who desire specific information about programs at NPS may obtain additional information by writing to the Superintendent, Naval Postgraduate School, Monterey, CA 93940. For a copy of the NPS catalogue, send a check for \$1.25 to the Navy Exchange Bookstore, Naval Postgraduate School, Monterey, CA 93940.





on the scientific front

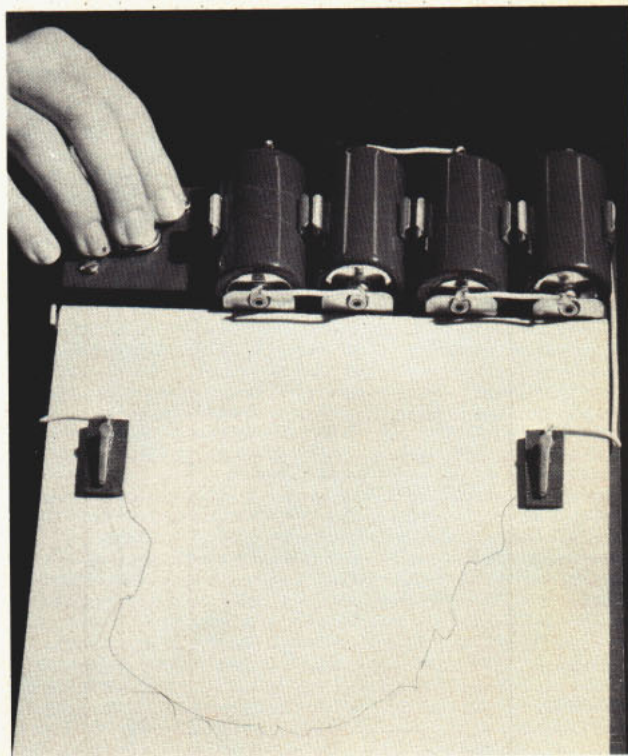
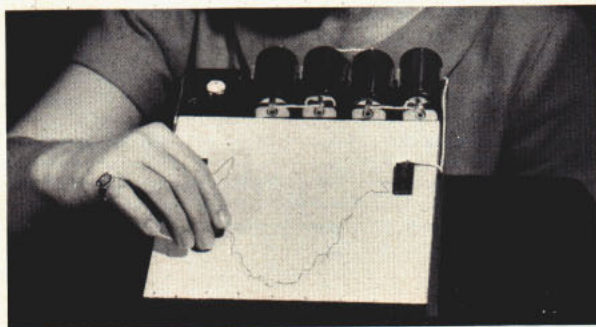
# NITINOL: METAL WITH A MEMORY

"Hey, Charlie, can I use your blowtorch for a few minutes?"

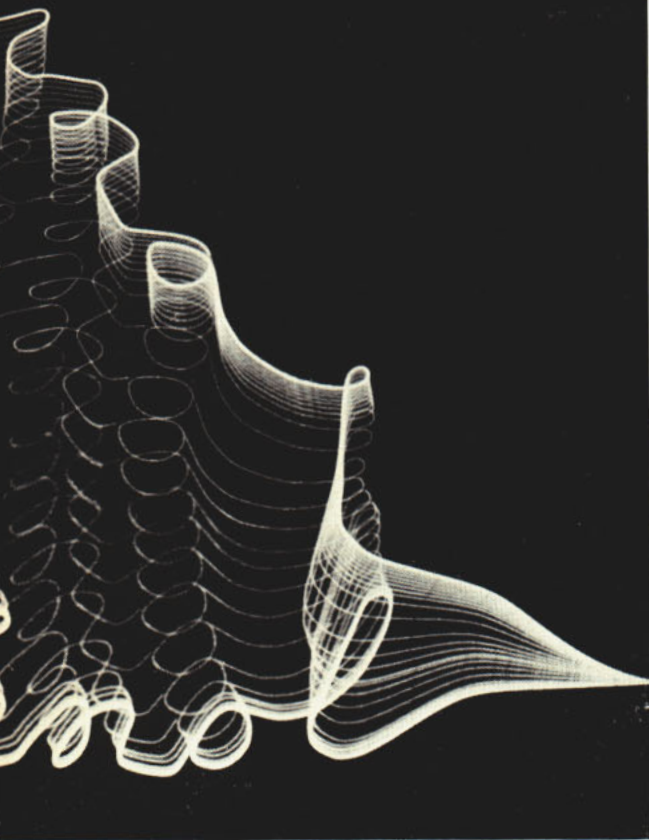
"What's the problem?"

"I got a fender wrinkled up and I want to straighten it out."

Farfetched? Not at all if your fenders are made of *Nitinol*, the Navy-developed metal with a memory. Form a piece of this metal into any useful shape, heat treat it at appropriate temperature, and it will remember that form from then on. If the piece, like the fender, is deformed by bumping, twisting, or what have you, the application of a bit of warmth will result in the metal's re-forming itself to the original shape.





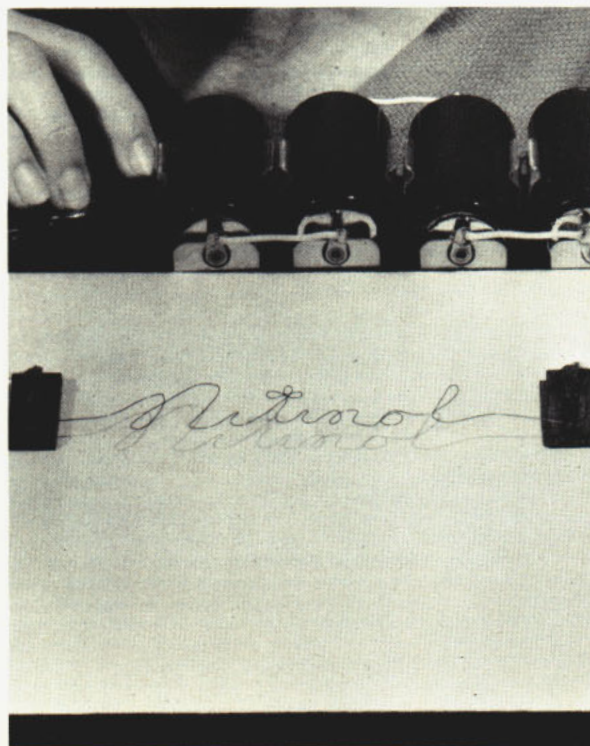
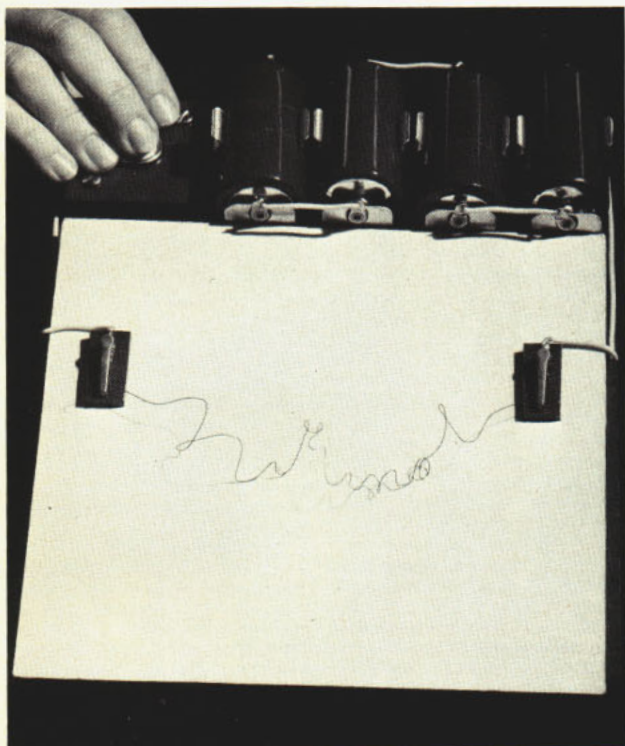


Well, say the experts, the foregoing car repair incident is possible, but costs today preclude use of this strange metal in such large quantities. Tomorrow, next year? No—but in the sometime future, maybe. However, *Nitinol* does have important uses in medical and dental techniques, and in aerospace industry.

*Nitinol* is an alloy which was discovered and developed at the U. S. Naval Ordnance Laboratory, now part of the Naval Surface Weapons Center (see below) located at White Oak, Md., just outside Washington, D.C. Its name comes from the two elements composing it, NI (Nickel) and TI (Titanium), and NOL for Naval Ordnance Laboratory. The metal is noncorrosive, non-magnetic, and lightweight. Its memory is unique, and why it works is still being researched. However, we do know how it works, and a number of activities, both military and civilian, are tailoring it to satisfy their requirements. The alloy has been made available to the civilian community through the Navy's Technology Transfer Program which is designed to offer the results of the Navy's research and development for translation into nonmilitary uses.

Now to get back to its potentialities in other areas. Take medicine. One problem in setting a broken bone, for example, is that of ensuring intimate contact between the two halves at the break. If there is a gap

Left: A time exposure photo shows progressive shapes Nitinol takes while forming programmed word. Below: (left to right) In this series of photos, a technician connects a twisted strip of Nitinol, pre-formed to shape the word NITINOL, to a heat-producing battery. Soon, the word is re-formed.





## METAL WITH A MEMORY

between the ends, the bone may knit, but not as well as it would had the ends been in complete contact. Here is where *Nitinol* might help. A piece of the material, its memory set to react to body temperature, is cooled to 50° F. and is fastened to the two halves of the bone across the gap. As the metal warms, its memory pulls the bone ends together correctly, something even the skilled hands of the surgeon may find difficult.

Medicine frequently has a need for a continuous monitoring of blood temperature to detect, for example, the beginning of a fever owing to infection after an operation. A piece of *Nitinol* can be set to straighten at a microscopic increase of temperature above standard body temperature, 98.6° F. Set into a meter-type frame, it can give either visual indication of temperature increase, or it can be used to make electrical contact to activate an alarm. The *Nitinol* would be activated by a probe reaching through skin to a vein or artery.

In setting up *Nitinol* for a specific task, the research scientist uses the desired "operating" temperature range as a basis for determining the percentage of each of the elements, nickel and titanium, making up the alloy. After melting the elements in a carbon crucible, the resultant *Nitinol* is cooled and formed into the shape needed. It is then heated to a temperature far higher than the proposed operating temperature to set the memory. For example, in the case of *Nitinol* for use in connection with body temperature, the temperature of boiling water (212° F.) is high enough to set the memory. After this heating, the *Nitinol* is then cooled to a temperature below the active temperature. At this point, the *Nitinol* may be deformed as much as is needed for the purpose intended. Upon being heated

to the set "operating" temperature, the *Nitinol* will return to its original form, or will try, with useful stresses being created. It might be said that *Nitinol* warms up to its job.

Numerous uses for the alloy have already been developed in the aerospace industry. One continuing problem there has been the development of secure couplings for tubing in high pressure hydraulic systems in situations where stresses and vibration work to create failures in most standard type fittings. *Nitinol*, formed into a tube and with memory set at a size slightly smaller than the tubing it is to join, when brought to the operating temperature, will clamp such tubing so tightly that destructive testing will cause the tubing itself to fail before the *Nitinol* joint does. Rivets made of *Nitinol* will clamp metal skin elements of aircraft tightly and permanently with their memory creating continuing tension on the members. This results in continuing structural strength never before possible.

The discovery of *Nitinol* is one of those chance happenings in the field of research. The alloy had been developed and was being evaluated because of its extreme resistance to crystallization from flexing with resultant failure. At the time of discovery of the memory, a piece of wire made of *Nitinol* was being passed around a conference table in a management meeting at the Naval Ordnance Lab. It was being flexed, bent and twisted by the group of scientists in the meeting when it came into the hands of a pipe smoker. Examining the metal closely, the engineer got it close to the bowl of his pipe. The metal suddenly started to straighten itself. Further application of warmth from the pipe resulted in the wire returning to its original shape.

As the inventor left the meeting to return to his laboratory and find out what he had stumbled upon, he was heard to mutter, "Management meetings are not *always* bad!"

## INTRODUCING:



Above is the new insignia for the Naval Surface Weapons Center.

On 1 Jul 1975 the Naval Ordnance Laboratory, White Oak, Md., and the Naval Weapons Laboratory, Dahlgren, Va., are scheduled to complete the reorganization plan combining them into a single command, the Naval

Surface Weapons Center. Headquarters of the center is at its White Oak Laboratory in Maryland. This move will bring together more than 5500 people working in ordnance research and development, and should lead to more important discoveries for the Navy and useful spin-offs for the civilian community, such as *Nitinol*, described in the preceding article.

In recent years there have been numerous developments and discoveries which have been successfully adapted to civil needs. This "technology transfer," more commonly called spin-off, has helped in such areas as environmental pollution control, law enforcement, transportation, housing and health. Here are a few.

One recent example is the "Restrictive Manipulation Device" for combination locks, which was developed by NOL.

Combination locks provide a certain degree of security but any skilled locksmith can eventually figure out most combinations. This is no longer true. The new lock has a mechanism which allows only five attempts to get the right numbers. After five tries the mechanism automatically refuses to recognize any combination.

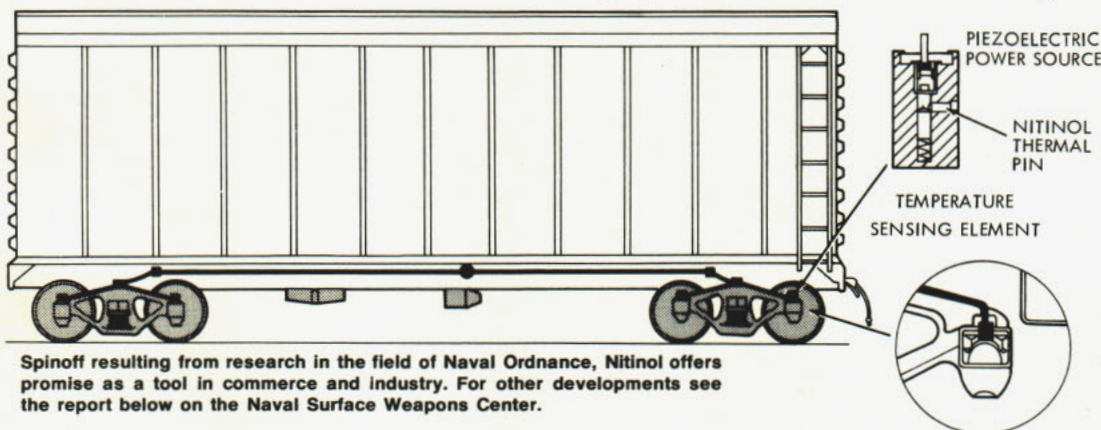


## Fighting "Hot Box" Failures -- With NITINOL Sensors

*Nitinol*, the alloy of nickel and titanium that reacts strongly to heat, was developed by naval ordnance scientists for military applications. Its unique characteristic (see article on page 24) has made it very appropriate for use in a "self-powered temperature sensor."

NSWC, White Oak Laboratory, working with the Federal Railroad Administration, has tested the feasibility of a *Nitinol* sensor system for preventing freight train derailments due to "hot box" failure on the cars. These failures, if not detected in time, may lead to disastrous pileups, and loss of life.

Effective "hot box" inspection must be at the point of incipient failure—that is, at each hot box on each railroad car—but the cost of automatic detectors prevents their being spaced closely enough to be able to catch some hot boxes before they cause axle failure and derailment.



Once it has been opened with the correct combination, the lock resets itself and gives the next user five more tries.

The device can also be placed in an all-lock condition so that it will not recognize any combination, even the correct one. Once this condition is set, the container can be entered only with explosives or brute force. The new lock should be useful to police forces, banks, stores with valuable merchandise, such as jewelry, or organizations needing increased lock security.

Another naval ordnance research spin-off is a fire-retardant intumescent paint system called "Insunol." Intumescence action is similar to Fourth of July "snakes," where the heat-induced swelling forms an insulating layer that retards the flow of heat. This type paint has been commercially available for some time but is unsuitable for the Navy's needs because of poor weathering properties.

Insunol is now being tested in civilian aircraft nacelle (engine housing) assemblies for DC-10s. The manufacturer's specifications called for a fire protection coating which would be lightweight, yet capable of protecting a thin aluminum panel from burn-through when exposed

With funding by the FRA, NSWC has come up with a self-powered thermal sensor believed to be rugged enough to withstand shock and vibration and do the job. In the NSWC concept, the alloy *Nitinol* is used as a pin in the sensor. When a bearing heats above a safe temperature, the *Nitinol* connection undergoes a sudden phase change, shrinks in length, and releases a spring-loaded firing pin. The firing pin initiates a series of reactions which activate the railroad car's air brake system, venting air from the brake line at a rate that automatically makes a normal brake application throughout the train.

This work is being taken one step further—from the feasibility study to an actual on-the-road test. Under a contract with the Federal Railroad Administration, NSWC will develop and install the system on a 124-car unit train operating out of Duluth, Minn.

Installation at this location will prove a real test for the system. Temperatures to  $-40^{\circ}$  Fahrenheit are not uncommon in the winter and  $+90^{\circ}$  temperatures are common in the summer. These temperatures, along with snow, sleet or rain, and dust, plus high operational miles, are ideal for testing.

to a torch flame for 15 minutes. Some 225 nacelle assemblies have been coated with Insunol to date. The manufacturer reports the coating has had over 2000 flight hours and is holding up well.

Driving safety has also been enhanced by the Navy's research at its White Oak lab. In a study for the Department of Transportation, Federal Highway Administration, Navy scientists have been looking into the use of a laser technique to measure the textural characteristics of road surfaces. Pavement quality governs the tendency for an auto to skid, especially in wet weather; the wear on tires and suspension systems; and auto riding comfort, which affects driver fatigue.

To properly maintain safe and comfortable conditions on our nation's highways, a rapid and inexpensive instrument is needed which is capable of measuring large sections of surface without disrupting traffic. The NOL laser technique, which can be mounted and operated from a moving vehicle, appears to meet these requirements. It also has the advantage of lending itself to automatic data processing.

These are just a few examples of how naval ordnance research has benefited us all.



# letters to the editor

## BAQ/FSA

SIR: I am presently stationed aboard an AS. We are in an eight to 10-month overhaul period and are about 1200 miles from our home port. My wife, also in the Navy, is stationed at our home port. Being separated increases our expenses, but I am not eligible for BAQ or FSA for the following reasons:

- BAQ—My wife isn't classified as a dependent because she is in the Navy. Many of my shipmates' wives work and receive salaries and they are still eligible. My wife collects BAQ but only as an E-2.

- FSA—I don't qualify because I haven't four years' active service, although I meet the other requirements. I would move my wife here but her being in the Navy prevents it.

Am I eligible for any extra pay while we are here in the yards? How can I obtain more information about the subject?—EN3 J. P. L.

- In dealing with your questions on BAQ and FSA, three sections of public law are involved. The first is Title 37, U. S. Code, Section 403, which prohibits the payment of BAQ to members without dependents on sea duty. The second is Sec. 427 of Title 37 which provides a FSA for members with dependents and in pay grade E-4 or above with more than four years' service. The third is Sec. 420 of Title 37, which states that "A member of the uniformed services may not be paid an increased allowance . . . on account of a dependent, for any period during which that dependent is entitled to a basic pay . . . Thus, you may not receive an increase in allowances on behalf of your wife. You are considered a member without dependents for entitlement purposes. Accordingly, you may

not receive a BAQ while on sea duty or FSA while separated.

The Navy has recognized the inequity facing members such as yourself and other members "without dependents" on sea duty. Attempts have been made to provide for payment in these cases, but the Comptroller General of the United States ruled the payment could not be made under the existing law.

The Navy does support a change to allow payment of a BAQ to members without dependents on sea duty and enactment of such a change would allow payment of BAQ at the "without dependents" rate to members in a similar situation. Upon resolution of the legislative proposal for a meaningful sea pay, the Navy expects to forward the BAQ for "bachelors" on sea duty proposal for consideration. A change in public law would also be required for payment of FSA.—Ed.

## San Dunes on the Fantail

SIR: I know of a United States ship that sailed through a desert sandstorm. On Sunday morning, 23 Mar 1975, USS *Opportune* (ARS 41) entered the Suez Canal at Port Said, heading in a southerly direction en route to Ismailia, Egypt.

At 0930 the wind began to pick up and the skies grew dark; within half an hour *Opportune* was in the center of a sandstorm. Visibility dropped to zero. The Egyptian pilot advised the ship to heave to and anchor in the canal.

He said it was the worst sandstorm he had seen in his 17 years as a pilot on the canal. *Opportune* anchored until the sand storm was over, about 2000. The next day she arrived in Ismailia and the crew began to shovel the sand dunes off the fantail.

—PN1 E. S. Kaczynski, USN.

- Can anyone top this?—Ed.

## Letter Designator

SIR: You've probably received a number of comments on the errors in the two answers relating to the firsts of Navy jets on page 51 of the January 75 issue, in which case you can add these to the collection.

The *Phantom 1* aircraft was manufactured by the McDonnell Airplane Company of St. Louis, Mo., and in 1946/47 it had not yet merged with the Douglas Aircraft Company of Los Angeles, Calif. Therefore, the proper designator would have been XFH-1 and FH-1 respectively, since McDonnell's letter designator was "H", not "D" which is the Douglas symbol.

Thanks for the "Navy Buff" Q/A article. There were things there that even this buff didn't know. —AZ1 J. S. N.

- We were happy to learn that you liked "For the Navy buff." To date your letter is the first to comment on the Phantom 1 letter designator—which attests to your alertness.—Ed.

## Ship Reunions

News of reunions of ships and organizations will be carried in this column from time to time. In planning a reunion, best results will be obtained by notifying the Editor, ALL HANDS Magazine, Navy Internal Relations Activity, Department of the Navy, Room 1044, Crystal Plaza No. 6, Jefferson Davis Highway, Washington, D. C. 20360, four months in advance.

- Squadrons VQ-1 & VQ-2—A reunion is planned for 26 July at Cameron Station, Alexandria, Va. Contact CDR John E. Taylor, 5002 Woodland Way, Annandale, Va. 22003. Telephone 703-978-5862.

- USS PC 565—A 30th anniversary reunion of those who served aboard during WW II is planned for 1-2 August in New York City. Contact Mr. Exum L. Pike, 8 King Road, Middletown, R. I. 02840.

- USS *Amycus* (ARL 2)—The fourth annual reunion is planned for the weekend of 29 August in Seattle, Wash. Contact Mr. Walt Skinner, 1940 Lana Ave., N. E. #25, Salem, Ore. 97303.

- NAS Ottumwa, Iowa—A reunion is planned for veterans who served or trained at the station during WW II for 22-24 August on the station grounds. Contact Mrs. Pat Friedman, 609 Hill St., Highland Park, Ill. 60035.

- LST 288—The ninth reunion is planned for those who served in her during WW II for September 1975. Contact Mr. Stephen Sudyn, 2919 Amsdell Rd., Hamburg, N. Y. 14075.

- USS *Oklahoma* (BB 37)—San Diego reunion dates changed. New dates are 9-12 October. Brochures and programs on request from Mr. Omar Keller, 5003 Western Dr., RFD 4, Fremont, Neb. 68025.

- USS *Bates* (APD 47, originally DE 68)—Anyone interested in a 30-year reunion contact Mr. Charles Holden, RR 1, Box 307, Dunkirk, Md. 20754.

- USS *Stoddard* (DD 566)—A reunion is being considered for those who served in her between 1951 and 1954. Anyone interested contact Robert S. Albright, 53 E. Summit St., Mohnnton, Pa. 19540 or James L. Hornberger, 119 Broad St., Salunga, Pa. 17538.



CTA1 Donald Winans



AT2 Stephen Bridges

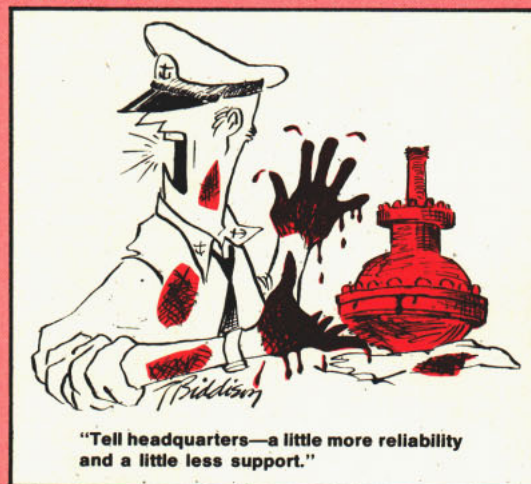


# on the serious side

YNCS Gerald Avera



CDR Ted Biddison



HM2 Charles Hankinson









# TODAY'S NAVY: One Navy, United in Purpose, Striving for Common Goals

